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No. 17

GREATEST ENEMY OF THE SHADE TREE

Injury Done by Curb Stone—Methods of Admitting Surface Water to Tree Roots from Both Sidewalk and Roadway—Sidewalk and Curb Gratings—Basins for Collecting Run-off

By CARL BANNWART, Secretary Shade Tree Commission, Newark, N. J.

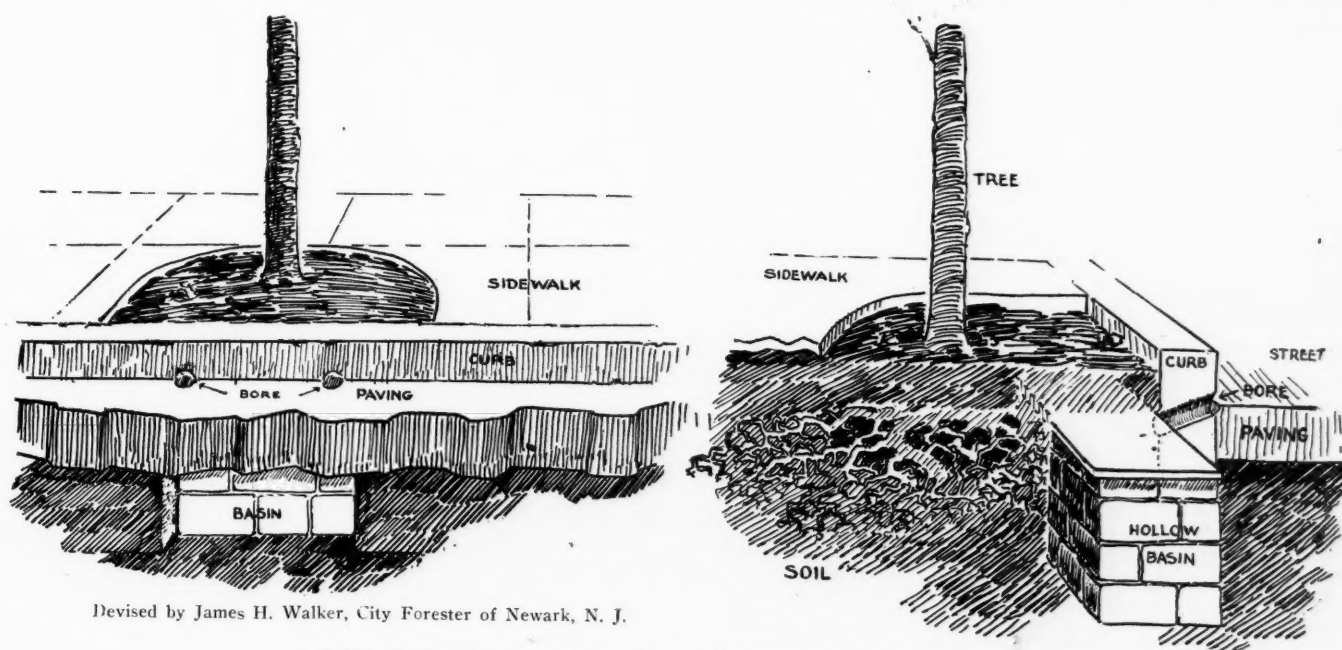
LET it be premised that I speak on engineering subjects not as one having authority, but as a layman. I am just setting down certain conclusions with the hope that these will be rebutted if incorrect. I invite being set right as to any error from an engineering point of view:

The greatest enemy of the shade tree is the curbstone. This latter follows a certain tradition. In the dim past some engineer hit upon the curb idea as a good way to put a boundary between road and sidewalk. Presumably these were some of the reasons. The curbstone limits vehicular traffic to a well-defined channel and therefore conserves a safe walking space for pedestrians. As part of the gutter formation it serves to receive water from the roadway and sidewalk and guide it to a catch basin. Then the curbstone gives a finished appearance to the street—and so makes a spick and span thoroughfare. Also the curb protects the edges of the sidewalk from crumbling.

Whoever invented the curb did a good thing for his time—a time when the question of "utility" was first, and that of city beautification by means of trees was not in the race at all. The curb of the present day is a lineal descendant of the rather barbaric age when every other consideration was sacrificed to compactness. That accounts for the narrow sidewalks and roadways in many European cities, for example.

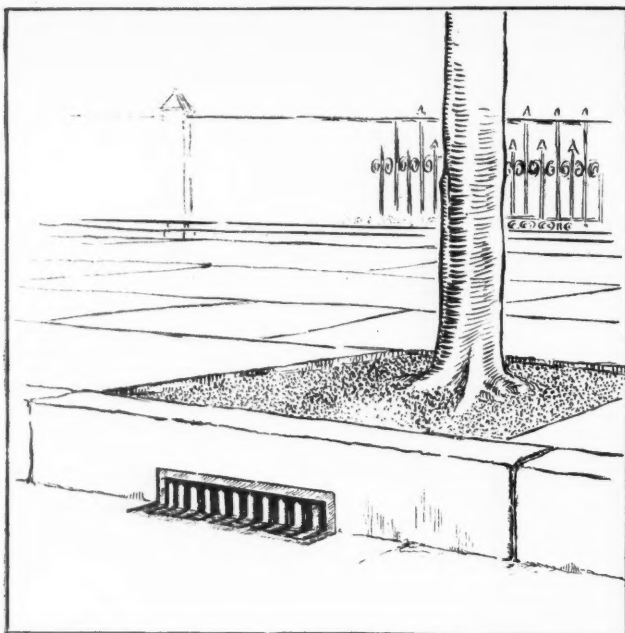
The curb is an enemy of street trees because it prevents the normal rainfall from reaching the roots. The impervious pavements impose hardship enough upon the tree, but this granite wall of curb is the last straw. This condition is annually killing thousands of stately trees in growing manufacturing cities. The evil is not so great with trees of six inches diameter and under. The water which falls on the sidewalk would be sufficient for these if they got it all, though even here the city engineer, with his love for straight lines and impervious pavements, again robs the tree by closing up the limited area known as the tree belt—a strip of open ground between curb and walk. What damage therefore is left undone by the curb is sure to be completed by the misguided zeal which prefers blank, lifeless, heat-reflecting pavement to this belt of living green, studded with thriving trees. This belt should be held inviolate for the use of the trees. And, by the way, when it is paved it adds practically nothing to the walking surface.

But not to digress from the curb, we contend that as at present constructed it kills more trees than any other one agency. It would seem high time to devise a curb which, while conserving the "utility," would promote also the aesthetics of the thoroughfare's development by having an adequate inlet for the necessary water to reach the



Devised by James H. Walker, City Forester of Newark, N. J.

PLAN FOR CARRYING STREET WATER TO ROOTS OF TREES



GRATING FOR ADMITTING WATER TO TREE.

roots of the street trees. Why not drill a hole in the curb—a hole, say, three inches in diameter—and have the area just inside filled with a bushel or two of cracked stone; this latter would catch a sufficient percentage of the water and direct it to the roots, so that when it rains and again when the streets are flushed, the tree would be assured of a good, thorough, life-giving drink.

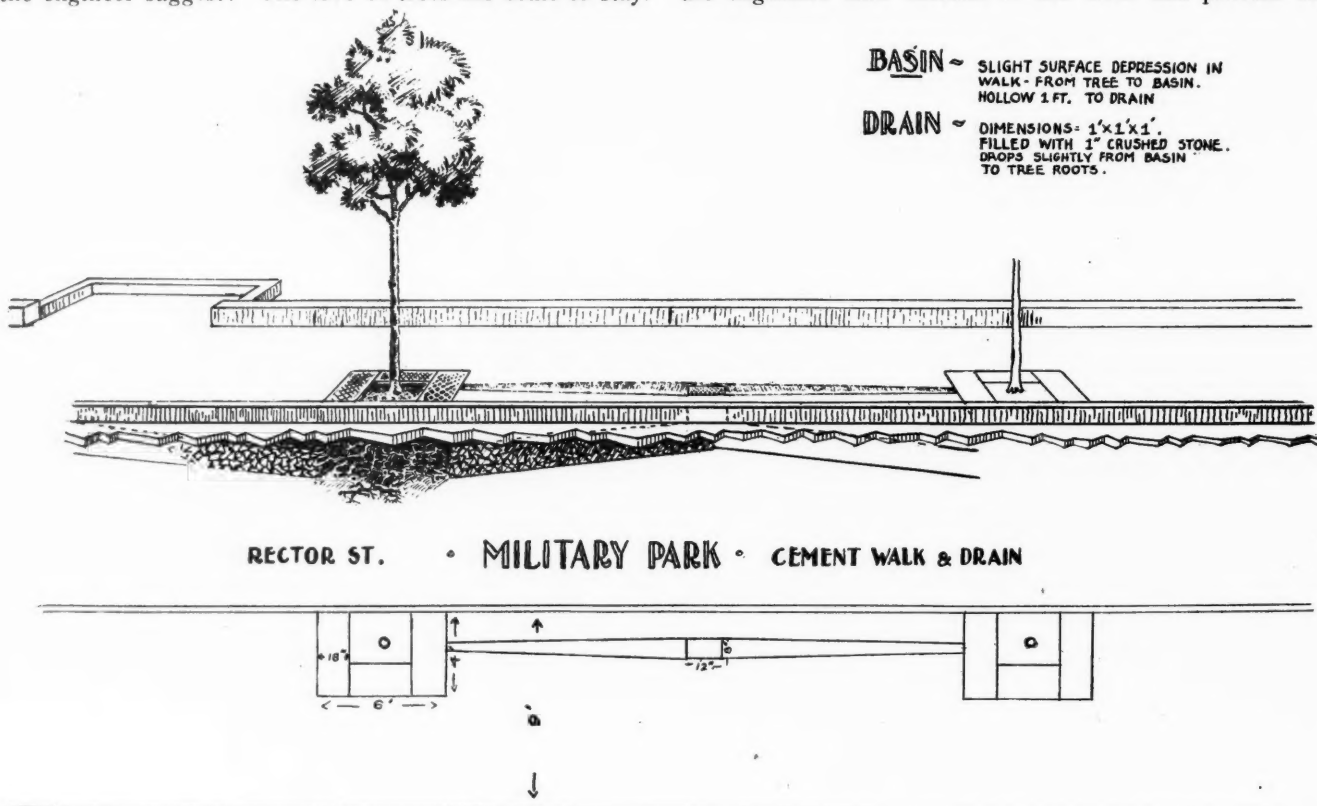
Another practicable, though more expensive, method would be to set a grating some six inches square in the curb, either on the upright or at the junction of the curb and pavement. This would carry a larger supply of surface water to the roots. The question, of course, would arise whether such an arrangement reduces the life of the curb by admitting water and frost. If the above plan presents vital objection, what alternative proposition would the engineer suggest? The love of trees has come to stay.

The conviction is strengthened that we must have them in our cities. This conviction will shortly become strong enough to compel provision for the supply of these essentials to the trees' life and thrift—air and water in generous quantities.

There is a method other than the one suggested above to provide such supply. But it is vastly more expensive. It is that of placing gratings around the base of the tree and level with the walk. Underneath such a grating a shallow pit would be formed. This would catch the sidewalk water as in a basin and thence it would percolate to the roots. The grating would take up a space of four by six feet. This contrivance could be supplemented by a tiled or blind ditch running in the center of the space between the two trees and directing the water to the roots—this ditch to be connected with a small grating eight inches wide by sixteen inches long, which catches the sidewalk water. Either of these expedients, or both together, would probably be adequate in nine-tenths of the cases, but it is manifest that the expense of installation would very much exceed that of the two curb methods outlined before; also the water supply would not be as copious, especially in streets where the roadways are flushed. Then, practically, the only way to effect such an arrangement would be by inducing individual property owners to incorporate it in their plans when new sidewalks are laid.

It cannot be too often reiterated that a sufficient supply of water and air are basic needs of our street trees. They will not thrive on any other terms. To make adequate provision for such supply, and to do this at the outset, is manifestly cheaper than to replace the large percentage of trees annually killed by lack of these basic needs. To this end the co-operation of city engineers is needed; and economy demands that they study the subject, and in their construction of street plans provide conditions that would render effective and permanent planting possible. Certainly the desire for well-shaded avenues will never be realized while these manifest fundamentals are unheeded.

We commend to thoughtful persons the practice followed in Washington, D. C., where in all street improvements the engineers take account of the trees and provide for



METHOD OF CONDUCTING WATER TO TREE

Devised by CARL BANNWART.

their needs; the practice in Massachusetts, where the Highway Commission has a consulting landscape architect, who in each contract incorporates specific requirements for the subsurface conditions, as these are related to the effective planting and maintenance of trees; the proposed practice in New Jersey, where the State Commissioner of Roads and the State Forester are inaugurating a policy substantially the same as that of Massachusetts.

This policy is of fundamental necessity; nor is it a novelty untried. It is as old as are the magnificent boulevards of Paris, the splendid triumphs of that great genius, who was at once civic engineer and landscape architect, and excelled in both—Baron Haussman. With far-sighted provision he shaped his highway plans with direct and insistent reference to this matter of street trees; so shaped his plans that the outcome *had* to be, was indeed inevitable—viz., the stately avenues of trees which form the most conspicuous and charming feature of Paris' civic landscape. And a hundred other like instances in municipal experience at home as well as abroad unite with this to demonstrate that to insure beauty and permanency to city plantings it is indispensable that there should be constant and cordial co-operation between engineer and tree man—that the planner of streets should work hand-in-hand with the planter of trees—to the end that those fundamentals be provided for without which trees—the children of the forest—can have no permanent abiding among the children of men who dwell in cities.

UNUSUAL PUBLIC CONVEYANCES

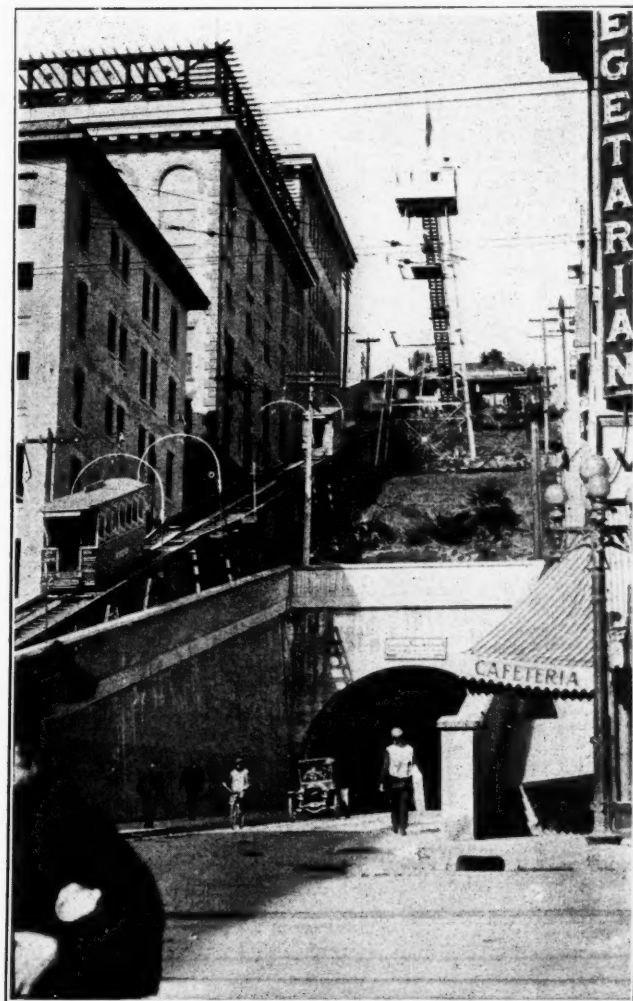
Two somewhat unusual transportation systems are to be found in Los Angeles, Cal.,—a trackless trolley and three incline railways which lead to various hilly sections. The trackless trolley is said to be the only one of its kind in the country and consists of the regular overhead wires, but no tracks, the cars running on the ordinary street paving. The cars are entirely different from the regulation street car; in fact, the first to be installed was a rebuilt automobile, equipped with the proper electrical apparatus and two overhead rods to connect with the wires. The two cars in use at the present time resemble an omnibus, have a capacity of sixteen passengers and are furnished



TRACKLESS TROLLEY IN LOS ANGELES.

with a steering wheel like that used on autos. They run up the winding road known as Laurel Canyon, connecting a newly opened tract with the city and meeting the regular car lines. The road is only a few miles long, but is so winding and steep that it was considered more economical to avoid the use of tracks, and this is of considerable advantage to the automobile traffic along that road. The cars turn out readily to avoid passing vehicles and are a complete success. The fare is ten cents, and the expenses are light, only the driver being required for a car.

The incline railroads are still shorter. Two of them run from the business district to the adjacent heights known as "Bunker Hill," a thickly settled apartment house district. The distance is only one block, but the grade is very steep. The fare is only one cent for commuters, five cents for a single fare, or three persons in a party for ten cents. Some of the hotels on the hill give tickets to their patrons. These roads operate by a cable which draws the cars to the top of the incline, electric power being used for



"ANGELS' FLIGHT" CABLE ROAD.

driving the cable. There is but one track, with a "turn out" in the middle of the course, where the ascending and descending cars pass. One man operates the two cars from a station at the top, and also receives the fares. A feature of these roads is a rest pavilion, free to the public, and an observation tower, which are appreciated by tourists. The company is said to pay an exceedingly high rate of interest on the investment.

The third of the incline railways, and the latest to be installed, was built to connect a newly opened real estate tract on Mt. Washington with the regular trolley line. It is about a quarter of a mile long, but otherwise resembles the short inclines in the center of the town.

PAVING IN 1911 AND 1912

Since preparing the tables published in our issue of March 21, giving data concerning roadway and sidewalk paving in 1911 and 1912, we have received figures from several additional cities, which we have tabulated and present herewith. Probably most or all of the officials sending these delayed doing so until they could obtain exact or official data, which were not previously available.

TABLE NO. 3—RECONSTRUCTION OR RESURFACING DURING 1911.

Name of city.	Sheet asphalt.	Brick or clay block.	Creosoted wood block.	Bituminous macadam.	Gravel.
Indiana:					
Indianapolis	14,251 ²	13,707 ⁶	2,040 ⁶	.....	.....
Massachusetts:					
Somerville .....	.....	.....	.....	2 ¹	.....
Texas:					
Georgetown .....	.....	.....	.....	.....	2M

NOTE.—The letter c indicates work done by contract; M, by the municipality. Quantities are either square yards or miles.
¹ Replaces macadam. ² Replaces sheet asphalt. ⁶ Replaces brick.

TABLE NO. 1—PAVING DONE DURING 1911

Name of city.	Sheet asphalt.	Granite, sandstone or other stone block.	Brick or clay block.	Bituminous		Gravel.	Other kinds.
				Concrete.	Macadam		
California:							
Chico	30,000c	.....	.....	.....	.....	145,000c	.....
Illinois:							
Hillsboro .....	.....	.....	17,300c	.....	.....	.....	.....
Indiana:							
Elkhart .....	.....	.....	33,705	.....	.....	.....	.....
Indianapolis	92,840c	.....	31,535c	8,609c	.....	57,992c	.....
Kansas:							
Emporia .....	.....	.....	.....	34,000	.....	.....	.....
Massachusetts:							
Somerville .....	.....	3,284c	7,367c	.....	17,800M	.....	.....
Missouri:							
Warrensburg .....	.....	.....	10,000c	.....	.....	.....	.....
Ohio:							
Oberlin .....	.....	.....	6,900c	.....	.....	.....	.....
Texas:							
Georgetown .....	.....	.....	.....	.....	.....	3M	.....
Washington:							
Bellingham	19,665c	.....	9,423c	.....	.....	12,706c	3,487c

TABLE NO. 4—ESTIMATE OF PAVEMENT TO BE LAID IN 1912.

Name of city.	Sheet asphalt.	Brick or clay block.	Bitulithic.	Bituminous concrete.	Plain or water-bound macadam.	Gravel.	Other kinds.
California:							
Chico	45,000c	.....	.....	.....	.....	.....	.....
Illinois:							
Hillsboro .....	.....	20,000c	.....	.....	.....	.....	.....
Rochelle .....	.....	34,000	.....	.....	.....	.....	.....
Indiana:							
Elkhart .....	.....	2½	.....	.....	.....	.....	.....
Indianapolis	120,000c	40,000c	.....	11,000c	.....	75,000c	.....
Kansas:							
Emporia .....	.....	.....	.....	39,000	.....	.....	.....
Massachusetts:							
Somerville .....	.....	.....	.....	.....	.....	.....	50,000*
Mississippi:							
West Point .....	.....	.....	.....	.....	11,000c	.....	.....
Missouri:							
Warrensburg .....	.....	12,000c	.....	.....	.....	.....	.....
Ohio:							
Oberlin .....	.....	19,560c	.....	.....	.....	.....	.....
Utah:							
Logan .....	.....	.....	36,000	.....	.....	.....	.....
Washington:							
Bellingham	49,220	.....	.....	5,615	.....	.....	.....

TABLE NO. 5—SIDEWALKS, CURBS AND GUTTERS LAID IN 1911.

Name of city.	Sidewalks				Curbs				Gutters			
	1. Amount laid in 1911.	2. Materials used.	3. Paid for by.	4. Method of payment.	5. Amount laid in 1911.	6. Materials used.	7. Paid for by.	8. Method of payment.	9. Amount laid in 1911.	10. Materials used.	11. Paid for by.	12. Method of payment.
Arizona:												
Douglas	6,400*	Cement	O.	T	6,400*	Cement	O.	T	.....	.....	.....	.....
California:												
Chico	2,000*	Concrete	O.	T	3,000*	Concrete	O.	T	10,000*	Concrete	O.	T
Indiana:												
Elkhart	28,776*	Concrete	O.	A or T	28,776*	Concrete	O.	A or T	28,776*	Concrete	O.	A or T
Indianapolis	72,747*	Cement	O.	A or T	30,553	Stone or cement.	O.	A or T	.....	.....	.....	.....
Kansas:												
Emporia	7,800*	Cement	O.	A10 or T	18,000*	Cement	O.	A10 or T	18,000*	Cement	O.	A10 or T
Massachusetts:												
Somerville	25,900*	Brk or grano.	C. & O. ²	U	15,957*	Granite	C. & O. ²	U	15,050*	Gran. block	C.	.....
Mississippi:												
Greenville	74,000*	Gravel	O.	A5	42,000*	Stone	O.	A5	.....	.....	.....	.....
West Point .....	.....	.....	.....	.....	.....	.....	.....	.....	6,600*	Grav. conc.	O.	U
Missouri:												
Boonville	19,380*	Concrete	O.	R or T	2,000†	Concrete	O.	R or T	.....	.....	.....	.....
Warrensburg	4,000*	Concrete	O.	U	8,000*	Concrete	O.	R	.....	.....	.....	.....
Ohio:												
Oberlin .....	.....	.....	.....	.....	10,300*	Sandstone.	O.	A10	.....	.....	.....	.....
Oklahoma:												
Sulphur	7,000*	Concrete	O.	T	.....	.....	.....	.....	.....	.....	.....	.....
Texas:												
Georgetown	4,000*	Concrete	O.	U	.....	.....	.....	.....	.....	.....	.....	.....
Utah:												
Logan	75,000*	Concrete	O.	A5	4,730*	Concrete	O.	A5	4,730*	Concrete	O.	A5
Washington:												
Bellingham	37,422*	Conc. or plnk.	O.	A & U	1,424*	Gran. or conc.	O.	A & U.	24,906*	Conc. or wood	O.	A & U.

² City pays ½ and owner ½.
 NOTE.—In columns 1, 5 and 9, (†) stands for square yards; (*) for lineal feet. In columns 3, 7 and 11, C stands for city, and O for abutting owner. In columns 4, 8 and 12 the letters have the following significance: A—Annual installments to city; or cash if desired; number of installments, if reported, indicated by numerals, as A5 means five annual installments; C—Optional installments; O—One-fifth cash, balance in annual installments; R—Tax bills against property; T—By property owners, by private contracts; U—Cash to city.

a form in the office, giving the cost of services rendered by each class of men or vehicles under each of the items appearing in the left-hand columns of forms 1 and 2. In addition to this, on the face of this form are entered the name of any workmen absent and the number of hours, the number of horses at work, in stable and in hospital, hired from or loaned to private parties, or other services; a record of labor rendered to or obtained from any other service, division or district, with its cost, and the cost of labor performed in yard and stable by yardmen, stablemen, feeders, watchmen, janitors, messengers, clerks, foreman driver, general foreman driver and chauffeur. On the back of form No. 3, the column headings of which

number of gallons or loads of water spread, and the number of subway barrels collected.

It is possible from these records to determine the cost of each class of service performed in connection with street cleaning and sprinkling on each kind of pavement maintained in the city, and of the other services performed such as collecting refuse, spreading sand, etc. Apparently, however, these are not totaled in the weekly reports in quite so much detail, although the number of loads of dirt collected by each cart and the number collected from each kind of pavement is shown by form No. 4, and also the total amount of waste and refuse collected, sand and water spread, etc.

Form No. 3
CITY OF BOSTON—PUBLIC WORKS DEPARTMENT—HIGHWAY DIVISION.
STREET CLEANING AND OILING SERVICE.

Report of **Foreman in charge of**
 **District No** 191

Collection.								Disposition.							
Labor.		Water Cart Drivers.		Machine Drivers.		Broommen.		Inspector.		Shovellers and Loaders.		Teamsters.		Dumpmen.	
No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.
.....

Back of Form No. 3

TEAMING.

Contractor.	Cart No.	Machine Sweeping								Snow Removal	Scraping.		Team Patrol	Push Cart Bbl. Collection	Waste Bbl. Collection	Refuse Box Collection	Subway Bbl. Collection	Private Ways	Total loads	Dumped at
		Asphalt	Bitulithic	Brick	Wood block	Granite Block	Plank	Macadam	Gutters		Gutters	Roadway								
.....

are shown herewith, is recorded the work done by each contractor who furnishes teams for this service; also under the same headings work done for or secured from any other service, division or district of the city. At the bottom of his page are entered the totals of the several items appearing on the right-hand columns of forms 1 and 2, such as bags or barrels filled by push cart men, waste barrels collected, etc.

From this daily report there is made up a weekly report. This form, No. 4, is divided into four parts, two on each side of a sheet. The first gives the number of loads of dirt, etc., collected by each cart during the week, the numbers of the cart being placed at the heads of the columns, the places where the dirt was dumped being entered in the left-hand column, and the number of loads dumped by each cart at each place being shown. The right-hand column gives the total amount dumped at each point. Snow loads are entered in red ink.

The second part, also headed by the cart numbers as in case of the first part, contains in the left-hand column the following:

Under machine sweeping: Asphalt, bitulithic, brick, wood block, granite block, plank, macadam gutters, public alleys, private ways. Also snow removal, scraping, team patrol, push cart barrel collection, waste barrel collection, refuse box collection, subway barrel collection.

The third part of this form contains a record of the loads collected for or by any other division, service or district of the city, the column headings being as follows: Contractor; cart No.; employed on; employed as; number of loads; to or from division, service or district; dumped at. In the fourth part are entered the number of bags or barrels filled by push cart patrolmen, the number collected from push cart patrolmen, the number of waste barrels collected, the number of large and small refuse boxes collected, the number of barrels or loads of sand spread, the

One of the difficulties involved in any system of recording work done and of cost accounting has developed in the use of these forms in Boston, this being the disinclination of inspectors and foremen, whose experience has been along the lines of supervising work rather than expressing themselves on paper, to fill out these blanks, and the real difficulty experienced by some of them in doing so, no matter how good their intentions. In addition to this, there is the objection that the foreman cannot always or even often find time to enter the reports daily on the office form (No. 3) in addition to their regular work of supervising a number of gangs scattered over a considerable territory, some of them finding it necessary to remain for some time after their regular hours to complete this clerical work. It has been suggested that a clerk should be provided for each foreman for doing this work, or else that the inspectors' reports from all the divisions be handled by one clerk either at the general headquarters or by visiting the several district offices each day, and there would seem to be excellent arguments in favor of this if the records are to be kept in as complete a form as is planned.

SEWER WORK IN SAN FRANCISCO

In San Francisco, Cal., large sewers are cleaned through manholes, with the use of buckets and windlass. During the year ending June 30, 1911, the sewer department removed from the large sewers 15,696 cubic yards of material at an average cost of \$2.97 per cub yard. Vitrified pipe were cleaned by flushing. The exact length flushed is not given in their report, but it is stated that 1,297 "blocks" of such sewers were cleaned by flushing and 16,377 catch basins were cleaned in the same way, the total cost of both kinds of flushing being \$18,243.

During the year 6,583 catch basins were cleaned, 5,971 cubic yards of material being removed from them at an average cost of \$2.14 per cubic yard.

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CHANGE OF ADDRESS

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APRIL 25, 1912.

CONTENTS

Greatest Enemy of the Shade Tree. (Illustrated.) By Carl Bannwart	619
Unusual Public Conveyances. (Illustrated.)	621
Paving in 1911 and 1912	622
Records of Boston Highway Work	623
Sewer Work in San Francisco	624
Advertising by Civil Engineers	625
Stone Block in a London Borough	625
Code of Ethics for Engineers	626
News of the Municipalities. (Illustrated)	627
Legal News—A Summary and Notes of Recent Decisions	636
News of the Societies	637
Personals	638
Municipal Appliances. (Illustrated)	639
Industrial News	641
Patent Claims. (Illustrated)	642
The Week's Contract News	643

Advertising by Civil Engineers

ON another page of this issue will be found a proposed code of ethics for civil engineers suggested by Chas. T. Main, president of the Boston Society of Civil Engineers. We believe there are few, if any, articles of this code which will not be subscribed to by all reputable engineers and which, in fact, have not been already stated and indorsed on several occasions. It is an excellent plan, however, to have these accepted ideas of professional ethics expressly set forth in a code and formally indorsed by the leading engineers of the country, as this would tend to give them greater weight in governing the acts of those doubtful as to what they should do under certain circumstances, and would, if it should unfortunately be necessary, serve as a foundation for and defense of criticism or even ostracism of a violator of them by his brother engineers.

One idea which we would especially refer to at this time is the matter of advertising or publicity through which an engineer may make himself known to those who might wish to avail themselves of his services. Mr. Main very wisely

says that the most effective way in which this can be done is for the engineer to prepare descriptions of work which he has done, accompanied with pictures and plans of the same, in a manner interesting and instructive, and endeavor as far as possible to have these descriptions read or listened to by those who may at some time wish the services of an engineer on similar classes of work.

There are three common methods of doing this; one is by becoming a member of the various engineering societies and reading before them papers giving such descriptions, in which way he becomes known to his brother engineers. The second is by giving similar information in a less technical form by papers or addresses before societies or organizations of men who are not engineers but are interested as laymen or prospective clients in work of the kind described. The third is by the preparation of articles for the technical or popular press. By the first method the engineer reaches directly those engineers who may at some time wish the advice of an expert, and indirectly those to whom his brother engineers can recommend him on the strength of having heard such paper. By the second method he reaches directly a more or less limited number of men who may have it in their power to employ him at some future time, either in person or as public officials. By the third method he reaches a much greater number of men, whose relation toward him as possible clients will depend largely upon the nature of the paper in which the article appears.

For those engineers who make a specialty of municipal work of any kind it would seem that the very best advertising would consist in articles published in a periodical which reaches the greatest number of city officials who are interested in those classes of municipal work of which engineering is a more or less important feature. And this applies not only to those who are desirous of serving municipalities temporarily as consulting engineers, but to any who are expecting to make municipal work their life business, since they cannot know at what time they may find it necessary or desirable to look for a situation similar to the one already occupied but in another city, and in doing so a previous familiarity of the city officials with their names, or the possibility of referring them to descriptions of work done, will generally be of the greatest assistance.

Stone Block in London Borough

A COMMITTEE of the borough council of Holborn, London, in a recent report upon repairing the roadway of High Holborn stated that the difficulty of keeping the paving in a satisfactory condition is very great. The weight of vehicles using this route and the high speed at which they are driven are perhaps more important elements than the mere increase in numbers, great as this is. The committee pointed out that the life of the asphalt paving under these circumstances is much shorter than it was a few years ago, and that the section of High Holborn east of Kingsway, repaved only two years since, and New Oxford street, repaved less than three years ago, already show signs of serious wear. They have therefore come to the conclusion that in order to secure a durable paving fit to bear such constant heavy traffic it is necessary to rule out both asphalt and wood and adopt granite blocks. They anticipate that the proposal will meet with objection on the ground of noise, but if the stones are laid as suggested there will be no more noise than at present with asphalt.

Last summer granite blocks were substituted for asphalt at the intersection of Tottenham Court Road and New Oxford street, the stones being dressed so as to provide a flat surface with very close joints grouted with bitumen. This is the kind of paving it is now proposed to lay in High Holborn, and the committee is confident from the experience gained from the experiment referred to that the result will be satisfactory.

CODE OF ETHICS FOR ENGINEERS

Duty to Their Clients, to Competitors, to Assistants and to Superiors—Consultation—Fees—Advertising—Attitude Toward Contractors

A DEFINITE code of ethics for the engineering profession has been presented in a paper by Charles T. Main, president of the Boston Society of Civil Engineers, and he has suggested that that body take steps towards its adoption. The code, based upon that of the Massachusetts Medical Society, is as follows:

The code is intended to establish certain general principles and rules of action for the members of the society.

1. Engineers should encourage sound engineering learning and training in the scientific schools and in actual work.

2. The success of engineers depends upon their moral character, scientific attainments, industry, integrity and business talent. The kind of competition considered honorable in purely business transactions cannot exist among engineers without diminishing their usefulness and lowering the dignity and standing of the profession.

3. The first duty of engineers is to their clients, who have a right to expect that that portion of their business entrusted to the engineer will receive very careful investigation and intelligent treatment and that such information derived by the engineer, which is peculiar to that business, will be considered as confidential.

4. Engineers in their professional relations should be governed by strict rules of honor and courtesy. Their conduct toward each other should be such as to secure mutual confidence and good will.

(a) They should take no step with a view to divert to themselves the clients or work of other engineers.

(b) If for any good reason a client should desire to transfer his work to another engineer, it is his privilege to do so, but the engineer in charge should be given notice, with the reason for the same, of such change by the client, and the engineer to whom it is transferred should, before accepting the work, communicate with the engineer in charge, in order that there may be no bad feeling caused through misunderstanding.

(c) All communications shall be made through the responsible head, unless others are designed to act for the principals.

(d) No attempt should be made to secure the services of assistants of other engineers, without communicating first with the principal in order to see that such action will not embarrass him.

(e) No assistant should contract to go with another engineer without first consulting with his superior.

(f) A superior should not stand in the way of advancement of a subordinate.

(g) The criticism of another's work should be broad and generous. The success of one member brings credit to the profession and the failure of one, discredit to the whole.

(h) The attitude of superiors to subordinates should be that of helpfulness and encouragement.

The attitude of subordinates to superiors should be one of constant courtesy.

The treatment of each other should be open and frank.

(i) The engineer should be willing to assume his proper share of public work and render such assistance as is possible for the general good of the community.

5. Consultations should be encouraged in cases of doubt or unusual responsibility. The aim should be to give the client the advantage of collective skill. Discussions should be confidential. Consulting engineers should not say or do anything to impair the confidence in the regular engineer, unless it is apparent that he is wholly incompetent.

6. Schedules of fees have local application only and are designed to show reasonable charges for service in such locations. With the understanding and consent of their clients, engineers may beforehand place any value on their services deemed proper.

7. Engineers should, so far as possible, not be interested in any mercantile enterprises which will prevent them from giving an unprejudiced opinion on appliances to be used in their work.

They should not receive commissions for materials, appliances or labor entering into the work under their supervision.

In advertising they should avoid, as much as possible, any impression of commercialism.

8. The attitude of engineers toward contractors should be one of helpfulness and tactfulness, combined with just and firm criticism.

9. As the lines of distinction between the various branches are becoming less marked, an intimate relation of the various branches should be encouraged.

In enlarging upon certain of the articles of this code Mr. Main said concerning 4 (b): "If the owner or client desires to make a change, that is his privilege, and there can be no wrong done if another engineer comes in on invitation; but to deliberately attempt to secure work which would naturally go to the other man is beneath the dignity of an engineer."

Concerning 4 (g): "Criticism of another's work should always be done in a kindly spirit, and the good points mentioned in addition to those which are not good. Owners or managers often decide as to whether the engineer's advice and plans shall be carried out, and take the liberty of changing the same. There is oftentimes more than one way to do a piece of work, and each way may give equally good results, and we should, therefore, hesitate before condemning another man's work, especially without a full knowledge of all the conditions. Of course there are sometimes cases where something is radically wrong, and we should then not hesitate to say so, if called upon to report on the same."

The article 4 (h) he commented upon as follows: "The treatment of superiors should be courteous and with little criticism, as it may be impossible for a subordinate to know all of the conditions entering into the solution of a problem, a portion of which only he is acquainted with. A subordinate should always be free to express his opinion to his superior if he thinks he sees any way to improve the work in hand. He should always endeavor to sustain his superior, unless he is aware of a false position on the part of the superior. As much responsibility should be put upon the subordinate as he can carry. Kindly criticism will accomplish more than abuse, and, as a rule, this will not be abused."

Concerning advertising, Mr. Main made the following excellent suggestions: "The solicitation of business should be done with the least possible show of commercialism. An engineer cannot advertise his brain as a storekeeper can his goods. It is, however, well for a man to keep his name in some proper way before the people who are likely to need his services. This can be done in a way which is effective by publishing short descriptions of work, accompanied with pictures and plans of the same, in a manner instructive and interesting. An effective manner to advertise is to prepare papers on subjects connected with one's line of work which will be read by those who may have such work to be done. There is then a distinct suggestion to the minds of men that the author knows something of what he is writing about."

"The acceptance of 'rebates,' 'commissions' or 'rakeoffs' by the engineer from manufacturers or parties furnishing apparatus, cannot be too strongly condemned," said the author.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Pavement of Cement Has Stood Its Test

Burlington, Wis.—That cement for street paving is a decided success here has been demonstrated by the city, and the streets paved with cement are now among the finest in the city. Considerable opposition was made to the laying of the cement paving here, it being contended that the pavement would not stand the wear, but three blocks on Pine street, three on Chestnut, two on Jefferson and two on lower Pine were paved with this material last year and have withstood the severe winter weather, showing up this spring without a crack or blemish of any kind. It is probable that cement will be used in paving other streets in the city during the coming year.

County Roads in Better Condition Than Ever

Marion, Ind.—The gravel and stone roads of the county are now reported in the best condition of their history. The superintendents have been very particular this spring both as to the time and manner of grading and dragging. They were on the roads as soon as the frost was out of the ground. The mud was first scraped from the top and the gravel was rounded up by scraping in. The result has been that the roads are well drained and have settled down to most excellent road beds. James H. McConnell, who rode over twenty-seven miles of roadway in the county recently, says he never saw the roads in better condition.

State Will Take Over Roads

Chester, Pa.—The State has promised to take over as State roads Baltimore pike and Edgmont Great Road so far as these highways extend in Middletown township. This report was given at a meeting of the Middletown Road Protective Association, an organization formed to assist the supervisors of the township. The association with Fred Taylor Pusey as chairman and J. Taney Wilcox as secretary, decided to request the State to take over these two roads. They held a consultation with the State authorities and were assured that Baltimore pike from Media bridge to Chester creek at Wawa will be taken over as a State road by June 1, and that the Edgmont Great Road will be taken over by the State by December 1.

Sets Pace for Work on Good Roads

Columbia, Mo.—The first work of the year on the cross-State highway was started last week when the commissioners of the Columbia special road district began active improvement. Eight miles of the roads in the district, which includes more than 100 miles of highways, are on the State highway. The Columbia commissioners expect to have their share of the work done by the end of summer. The equipment with which work started consists of nine mules, six patent lever drags, 12 scrapers, 2 graders and 4 wagons. Other equipment is to be added immediately. Gravel is to be used to surface many of the roads. At a special election last fall \$100,000 was voted for the improvement of the roads in the district. This money is deposited in local banks and is drawing 3 per cent. interest. J. A. Hudson, J. L. Dodd and Frank S. Conley are the commissioners. Curtis Hill, State highway engineer, says that the figures which he is now compiling for a bulletin prove conclusively good roads and increase in population always go together. "In the 30 counties of Missouri showing the greatest increase in population," says Mr. Hill, "according to the census last taken, there was an increase in miles of good roads of 22 per cent. Of the counties showing a decrease of population for the same period, the percentage of roads improved is seven-tenths of 1 per cent."

Model Road to Be Built Near Raleigh

Raleigh, N. C.—A one-mile stretch of model improved road is to be constructed at once by the Wake county commissioners from the Glenwood city limits out Fairview road to the Raleigh Country Club.

Build Good Roads in Ford

Dodge City, Kan.—The Ford county commissioners have responded quickly to the present wave of good roads sentiment along the new Santa Fe trail. At a special meeting held here they considered bids for the grading of the trail from Dodge to the east line of the county and the building of concrete bridges wherever necessary, and the contract was awarded to H. McKee, of Spearville. It provides that the work must be completed by June 1.

Street Improvements to Begin by Contract

Milwaukee, Wis.—Work on completing unfinished street improvements has been resumed by contractors. First attention will be paid to upper Vliet street, which was torn up last fall in the hope of getting the new asphalt pavement laid before weather conditions prevented. Planks were laid on the street to remove objections of property owners when it was found that the work could not be finished. Fifth street will be fixed next, followed by others which remain torn up. Recently contracts for several miles of asphalt work were let to the Badger Construction Company and to the Conway Construction Company.

Company Commences Paving

Rome, Ga.—The paving work of the Southern Asphalt & Construction Company on Third avenue has commenced and will be pushed to completion as soon as possible. The work of this company on South Broad street is nearly done and the full force will soon be transferred to Third avenue. The first work, of course, is the grading, and a force of men have started to dig up the old macadam and chert on the hill between East Fourth and East First streets. The work of laying wood block between Broad and East First will be finished; then Third avenue will be paved with asphalt macadam, with a macadam base of six inches. This is the same surface as on South Broad. The only difference is that the base will be of macadam instead of concrete. This is said to be better for steep grades such as that on the hill.

System of Highways 1,500 Miles Long

Camden, N. J.—The series of road bills approved by Governor Wilson and which take effect immediately, will give New Jersey eventually 1,500 miles of State highways and make radical changes in the method of dealing with these roads. The establishment of the system of State highways is placed in the hands of the State Highway Commission, and by one of the bills the State treasurer is added to this commission, thus making it Republican. It is now composed of Governor Wilson and State Road Commissioner Stevens, Democrats, and President Prince, of the Senate; Speaker McCran, of the Assembly, and State Treasurer Daniel S. Voorhees, Republican. Assembly bill 293, the most important of the measures by Assemblyman Whyte, provides that the State highway system shall include roads, or parts of them, as now are or will form main-traveled highways of reasonably direct route between the county seats; existing improved highways being chief lines of travel between seaside resorts and the large centers of population, other roads which naturally would be a part of a State system, and the ocean boulevard and the Delaware River Drive. The State road commissioner is to prepare and submit to the State Road Commission a map of the proposed highway system. After making necessary modifications the commission is to adopt the mapped road system as the State highway system. The State system is not to exceed 1,500 miles of highways. Whenever a road or portion thereof is taken over by the State its further improvement, maintenance and repair shall be at the expense of the State. Important regulations for the use of the State roads are contained in the statute. No vehicle can be driven over the roads with a load of more than 30,000 pounds. Vehicles must be not more than 12 feet high nor 9 feet wide. No vehicle tire can be fitted with any blocks, hobs, studs or other projections.

SEWERAGE AND SANITATION

Objections to Roller Towel Embargo

Topeka, Kan.—Individual roller towels, which the State Board of Health has ordered installed in all public wash rooms, are causing the hotel keepers much trouble, because they say their patrons have developed an "absent-minded habit of sticking the towels in their pockets and walking away with them." The general use of paper towels is being forced upon the hotel men because of the prevalence of the "habit." Besides being a fine collector of germs and dirt, the old-fashioned roller towels were popular with the proprietors of hotels because they always stayed in place.

Will Commence Work on Large Interceptor Sewer

Washington, D. C.—The Warren F. Brenizer Company expects to start work at once on the large interceptor sewer to be constructed from Poplar Point to Benning, along the Eastern branch, at a cost of approximately \$60,000. The necessary material for this work is arriving on the ground. The firm of Clark & Winston is pushing its work of extending two sewers from the shore line of the branch into the water, in order that they can connect with this large sewer. This will eliminate a number of sewers which now have their outlets in the Eastern branch and greatly improve the sanitary conditions of the surrounding communities.

Broad Anti-Smoke Bill

Denver, Col.—A smoke abatement commission of five members, to advise the mayor and the smoke inspector, is provided for in a bill drawn by the city art commission, which will be represented at the city council. The bill is drastic in its conditions and would repeal all present smoke ordinances. For every alteration made in a chimney of any kind a permit is required. Before a heat or electricity generating plant of any kind is constructed, repaired or altered in any manner, the plans and specifications have to be submitted to the smoke inspector. Persons failing to take out permits to construct or repair furnaces, etc., will be fined \$25 for each day of the construction or alteration; persons who cause dense smoke to rise from heating plants, locomotives, etc., are to be liable to a fine of from \$10 to \$100 for each offense.

WATER SUPPLY

City May Operate Water System

Los Angeles, Cal.—The city of Los Angeles has the legal right to operate a municipal water system in San Pedro, owing to the alleged failure of the San Pedro Water Company to supply water according to its contract, in the opinion of City Attorney J. W. Shenk. The city council called on the attorney for an opinion as to the city's rights in the matter. Complaints about the water furnished in San Pedro have been numerous, the council said, and it seeks means to secure a proper supply for that portion of the city. Shenk holds the company's failure is sufficient reason for the city to terminate its contract with the company.

To Fix Value of Water Companies

Trenton, N. J.—In order to arrive at the valuation of the property and plant of the East Jersey Water Company and other corporations furnishing water, it is the intention of the State Water Supply Commission in the near future to employ the best engineers in this section of the country to appraise the water supplying corporations, the legislature having appropriated \$15,000 to carry out this scheme. Some time ago the East Jersey Water Company made an offer to the State water supply examiner for the sale of its property, but the commission was unable, because of lack of funds, to ascertain the true value of the water company's plant and property. It is the intention of the water supply commission in either accepting or rejecting the water company offer to be guided by the engineer's report. If the offer is to be accepted it will have a far-reaching effect in the northern section of the State because of the difficulties some of the municipalities have experienced in obtaining a water supply.

Ample Water Supply for City

Puyallup, Wash.—That the residents of Puyallup need not fear the usual midsummer scarcity of water this year is made certain by the announcement of G. D. Ball, city engineer, that two large springs near the present water supply at Salmon springs have been found and will be run into the city reservoir. According to Mr. Ball the flow from these two springs will increase the present supply fully 50 per cent. The supply now exceeds the demand, but this summer the additional water from these two new springs will be needed. These two springs make a total of six springs that will soon flow into the city reservoir. The entire supply in the past has been obtained from four. "Mayor Mark Graves, Superintendent Watters and myself visited the springs," said Mr. Ball, "and found that although some water is going to waste it is because the flow at present exceeds the demand. The water level is as high as safety permits. There are no leaks in the pipe line that amount to anything, so the people of Puyallup should not worry over any scarcity in water this summer." Work of laying the pipe will be begun as soon as the pipe is obtained, according to Superintendent Watters.

Consumption Increases 20 Per Cent. Per Capita

St. Louis, Mo.—Every man, woman and child in St. Louis in the fiscal year which ended April 8, in the annual report of Water Commissioner E. E. Wall, is credited with having used 120 gallons of water a day, a gain of 20 gallons over the previous year. The amount pumped was 338,640,000 gallons. Clarification cost \$4.839 per 1,000,000 gallons. Although more water was pumped, the expenses of the department were \$12,000 less than the previous year. The gross operating and maintenance expense was \$1,010,066.68. Receipts amounted to \$91,177.92, leaving a net operating expense of \$918,888.76. New work cost \$238,971.69. The total expenditure was \$1,157,860.45. The balance left in the water fund unappropriated is \$1,248,587.42. "The sudden and large increase in water consumption may be attributed, in part at least, to the long, dry and hot summer of 1911," says the water commissioner in his report. "The maximum daily pumping was 108,000,000 gallons, or 153 gallons per capita. The minimum was 97,000,000 gallons. A study of the increase in population shows the average daily consumption will be 120,000,000 gallons in 1920," says Wall. "The present works, designed twenty-five years ago, were calculated to supply the city to 1915. With the additions and extensions now under construction and under contract, and by a persistent and thorough effort to reduce the waste and leakage to a minimum, I believe the city can be supplied with the present works until 1920. By that time the construction of new works should be sufficiently advanced so as to supply the deficiency after that date and keep pace with the needs of the city until it reaches a population of 2,000,000." Wall urges that plans and surveys for a new plant be started this year. He estimates it will take ten years to complete works having a capacity of 200,000,000 gallons a day. In reviewing the work planned for this year Wall says \$784,000 will be spent in improving the distribution system. The pumping capacity will be increased 20 per cent. with the installation of new engines. For this purpose \$385,500 has been set aside. Softening the water, which cost .0054 cent a thousand gallons last year, saved the people of St. Louis \$437.50 daily. It is estimated this amount of soap would be necessary to perform the same service. In the clarification process 8,094 tons of sulphate of iron, 12,665 tons of lime, 17½ tons of sulphate of alumina and 8 tons of hypochlorite were used during the year. Ninety-seven of every 100 bacteria were removed in the process. An electrolytic survey of the city to determine to what extent escaping electricity from street car tracks is eating the water mains is being made.

Water Works System Almost Completed

Russellville, Ark.—The Russellville water works system is nearing completion and will be ready for the initial trial test within a week or ten days. All the mains in town have been laid and the pipe line from town to the dam site on Illinois river six miles north of town has been completed with the exception of crossings at Prairie Creek, Shilo and Baker's creek. The pipes will be placed 18 inches beneath the beds of these streams. The pumps have arrived and all other machinery is in position.

Filter Plant Cleanses Muddy River Water Effectually

Harrisburg, Pa.—Treating all the while some of the dirtiest water the Susquehanna River ever carried, the city filter plant on the Island for the month of March kept up its remarkable record. This is confirmed by the report forwarded here by James W. Caird, of Troy, N. Y., consulting bacteriologist of the Board of Water Commissioners. As a result of the freshets, many of them very high, the bacteria were very high for several days. On the 17th there were in the river water 117,213 per cubic centimeter (sixteen drops). The average for the month was 20,263 per cubic centimeter. The efficiency for the entire month in the elimination of color was 100; of turbidity, 100, and of bacteria, 99.99. Of 115 tests taken by Chemist Allen of the raw water, 94 showed bacilli coli, and in the same number of tests there were none in the tap of the filtered water.

To Insure Pure Water

Indianapolis, Ind.—H. E. Barnard, chief chemist for the State Board of Health, has issued a circular letter to the superintendents of the water works plants of the State, calling attention to recent improvements in the water laboratory under his direction and asking that the superintendents co-operate with the State board in the board's efforts to insure pure water through public supplies. The laboratory has recently been equipped with an emergency hypochlorite of lime plant, which will be loaned whenever the occasion warrants for testing and other purposes. Mr. Barnard set out in the letter that the laboratory desired to make at least four tests a year of water from all public supply sources in the State. "The necessity for a rigid control of the quality of water furnished the consumer is well understood by those who have to do with supplies," wrote Mr. Barnard. "While there are some deep well supplies so located that pollution of the wells themselves is not possible, yet from time to time it is found that there is trouble at the reservoir or elsewhere in the system, and that the quality of the water is not satisfactory. This is much more frequently the case with surface water supplies, whether they are derived from a river or lake or impounded rainfall. No surface water is free from the danger of pollution, and it is this class of supplies that can be served most advantageously by the State laboratories."

Lynn Water Department Report

Lynn, Mass.—Water Commissioner Thomas Campbell 2d, in the 40th annual report of the water department and the first under commission government, announces that the gross receipts have increased more than \$14,000 over last year. He recommends among other things the purchasing of new machinery at the Walnut street pumping station and suggests that the purchase of meters by the consumers and the establishment of standard meter rates be taken up and adjusted as soon as possible. In the annual report of Superintendent Daniel A. Sutherland, which is incorporated in the water commissioner's document, there is a detailed statement of the every-day workings of the department. Mr. Campbell says: "The gross income for the year has been \$305,877.99, an increase of \$14,376.17 in comparison with the receipts of last year. We have continued to replace the old cement pipe with cast iron pipe, generally of a larger size. The work on the new dam at Breed's pond is progressing very satisfactorily and when completed we will be able to fill Breed's pond from Walden and will be ready to make plans for increasing our supply by taking water from Ipswich river. A pumping station at Montrose has been built and equipped with two centrifugal pumps of three and five million gallon capacity. This enables us to take water from the Saugus river when the water in the river is too low to run by gravity into Hawkes pond or when the water in the pond is higher than that in the river. There is in process of construction at Glen Lewis end of Walden pond a pumping station and screen house to be used in connection with the 36-inch pipe line and conduit to Breed's pond, which is nearly completed. This will allow us to use water from Walden pond through Breed's pond next summer if necessary, and will greatly improve our system of storage. It is essential that in the near future new pumping machinery be installed at the Walnut street station to take care of the increased consumption.

City Must Lay Service Pipes to Curb Line

Altoona, Pa.—Mayor S. H. Walker has given his official approval to the ordinance passed by councils requiring that all connections with the water mains and all service pipes between the mains and a point one foot inside the curb line, and all repairs to such pipes shall be made, laid and kept in repair by the city of Altoona. This is one of the most important pieces of legislation that has been enacted for some time, and it repeals an ordinance passed with the same purpose in view and approved on December 4 by Mayor Hoyer shortly before his term of office expired. There are a number of features embodied in the new ordinance that were not embraced in the measure that has been repealed, chief of which is that the prices that will be charged the property owners are somewhat higher. All service pipes are to be extra heavy wrought iron galvanized, or lead-lined iron pipe, and must be laid at least 3½ feet below the surface of the highways. The schedule of charges for unpaved streets will be as follows: For 1-inch connection, \$15.75; 1¼-inch, \$20.75; 1½-inch, \$29.75; 2-inch, \$33.75; 3-inch, \$48.50; 4-inch, \$53.50; 6-inch, \$67.50. The charge for paved streets is as follows: For 1-inch connections, \$32; 1¼-inch, \$36.50; 1½-inch, \$43; 2-inch, \$52; 3-inch, \$64.50; 4-inch, \$68.50; 6-inch, \$83.50.

STREET LIGHTING AND POWER

Gas Pressure Tests

Schenectady, N. Y.—The Mohawk Gas Company, under the direction of General Manager Henry W. Peck, has just completed a test of pressure in the gas mains at various points about the city. In all 42 tests were made and the conditions were found to be satisfactory. The next test of the kind will be made in September, which is the period of the year when the consumption of gas is greatest. The object of the tests is to ascertain places where the pressure is below an equivalent of the pressure exerted by a column of water 3½ inches in height. All the standard ranges and burners used with gas are adjusted to this pressure, and it is necessary to maintain the pressure near this amount. Where it is not reached the company puts in new mains or adds to the flow of gas by making attachments to other mains of sufficient size. The tests were made with a special meter provided with a recording card, and the pressure is taken for a full 24 hours, the card showing the record for every minute of the entire day. This also gives the company information so it can regulate the pressure from the gas houses at times when the consumption is greatest to overcome the friction produced in the pipes at such hours.

New Lights for Auto Boulevard

Atlantic City, N. J.—The parks and railroad committee of city council has adopted plans for lighting standards which are to be erected on the boulevard entrance to the city between Atlantic and Albany avenues and the meadow boulevard bridge. The designs selected were those submitted by a representative of the Smyser-Foyer Company, of Philadelphia, to Atlantic City, which sent sample lighting standards a year ago in competition for the Boardwalk lighting standards. The committee desires to erect a line of lights, sixteen on each side, between Atlantic avenue and the Boulevard entrance.

Dam at Power Plant Breaks

Booneville, N. Y.—By the breaking of a section of the dam about 50 feet long, the village electric light plant, located on Black river, at Denley Station, was placed out of commission. Booneville was without electric lights and the mills and establishments without the power upon which most of them depend. The electric light commission called an expert to see what temporary repairs could be made to permit of power being produced again, though the problem was rendered difficult by the high water. The dam which broke is a wooden structure and the portion which went out was about 12 feet in height, and comprised less than one-fifth of the entire length of the dam. Two years ago work was started on a concrete dam and was continued last year. This dam is about two-thirds finished and the portions which have been built withstood the flood uninjured.

Lower Price of Electric Lamps

Pasadena, Cal.—A reduction of from 25 to 30 per cent. in the price of lamps is announced by the municipal lighting plant. In making announcement of the reduction C. W. Koiner, general manager of the lighting department, calls attention to the fact that it is cheaper to purchase Gem or tungsten lamps than to accept carbon lamps for nothing on account of their greater life and less current consumed. Under the new schedule 16-candlepower Gem lamps which formerly cost 20 cents will now cost only 15 cents, and 32-candlepower tungstens which formerly cost 60 cents now are reduced to 45 cents.

Change in Cleveland Electric Lighting Situation

Cleveland, O.—The Cleveland Electrical & Illuminating Company, which has been at war with the city since the late Tom Johnson launched the project to establish a municipal plant, is to be sold to an eastern syndicate represented by Harrison Williams, of New York, for \$9,000,000, it was announced. The present mayor, Newton D. Baker, has kept up the fight for cheaper light and \$2,000,000 in municipal bonds have been authorized to build a city plant. Myron T. Herrick, Ambassador to France, is a heavy stockholder in the Cleveland Electrical & Illuminating Company, and the sale to New York interests is said to have been decided upon after his assent was secured.

FIRE AND POLICE

Decides Hot Water in Fire Engines Necessary

Portsmouth, Va.—The fire committee of the council has recommended to the body in its report, which was adopted, that it is necessary to keep the water in the boilers of the steamers of the fire department hot at all times. This matter was referred to the committee on account of the delay on the part of the department in getting streams on fires. It was explained at the time that the delay was caused by the fact that the water in the boilers was cold and that it had to be heated after an alarm had been sent in. In some instances this caused a delay of as much as fifteen minutes before a stream could be obtained.

Suburban Firemen to Get New Equipment

Baltimore, Md.—Many changes in the equipment of the Baltimore County Fire Department are to be made. The old Arlington engine of two horses will be supplanted by a new three-horse combination truck, which will be used until the auto fire truck recently granted by the county commissioners is placed in service. Mt. Washington will also get a three-horse truck, using the one Catonsville discarded when the auto engine was installed. This is in service now at Arlington. These steps have been made necessary by the large number of fires recently in the northern suburbs. Pikesville is now soliciting the funds for an auto engine, and the committee is meeting with great success and probably will soon add the auto engine to the department.

Mayor Planning a Municipal Parade May 1

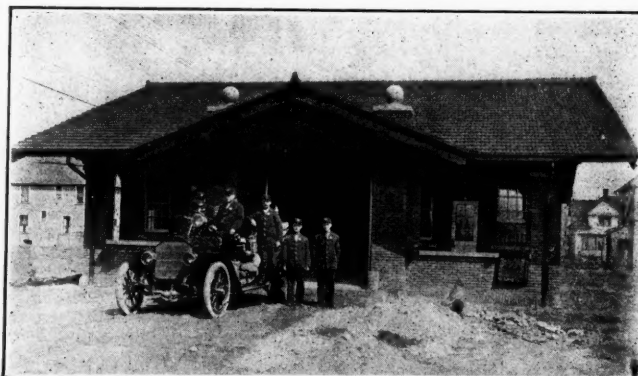
Indianapolis, Ind.—In celebration of the recent reduction in fire insurance rates and to show what the present city administration has done, Mayor Shank is planning to have a municipal parade on May 1, in which all city departments will be invited to participate. The mayor believes the recent reduction in rates and the improvements that have been made in the police and fire departments during his administration are sufficient achievements to be celebrated. One of the principal features of the parade will be the new fire apparatus that has been installed and the automobiles that have been added to the police department. At the beginning of the present administration the only automobiles in the fire department were those used by the fire chief and by the fire alarm telegraph system. Since then a large amount of motor fire fighting apparatus has been placed in service. Other features will be the forty-two firemen that have been added to the fire department as a part of the requirements for the fire insurance rate reduction. Still another feature, and one the mayor believes to be important, will be the seventy-two patrolmen added to the police department during this administration. Other city departments will be expected to display their vehicles and equipments. A municipal parade was given during the preceding administration and created considerable interest.

Four New Motorcycles for Police Department

Mount Vernon, N. Y.—Four new motorcycles have arrived at police headquarters, and according to Chief of Police Foley, will soon be put into commission. The machines are of German manufacture and are of the newest models in high-power cycles. Two of the machines are of single cylinder, four horsepower type capable of from 7 to 50 miles an hour, and the other two have two cylinders, of seven horsepower, and are capable of making as high as 70 miles an hour. The two smaller machines are to be used for general patrol purposes and the two four-cylinder motors will be used for the chasing of auto speeders and other work where a high-speed machine may be required.

Indianapolis' New Bungalow Fire Station

Indianapolis, Ind.—The new fire station lately opened in Thirty-eighth street is unique. It is a one-story bungalow, the sleeping room of the men adjoining the driveway occupied by the combination motor engine and hose wagon



Courtesy Indianapolis News.

BUNGALOW STATION, 38TH STREET, INDIANAPOLIS.

stationed there. The men thus do not have to slide down brass poles to go into service. There are no horse stalls attached to the new house, but there is an automobile repair shop instead. There is no residence in the district that is better than the new north side fire station, which has been numbered 28. The motor engine in service there is one that can pump water from cisterns in districts where there are no water mains. The new station has six men in the command of Captain John W. Blackwell.

Lowest Fire Rate in State for El Paso

El Paso, Tex.—By May 1 the fire insurance rate of El Paso will be the lowest in the State of Texas, for by that date it will be reduced from the present figure of 30 cents down to 20, which will be a reduction from 44 cents in a year. Improvement in the water works and the fire department by the city have brought about this change, and the last link will be made in the chain for fire insurance reduction when the Watts plant is tested out. At an expense of about \$7,000 the city has installed a 4,000,000 gallon pump with a pressure of 150 pounds, and this is giving El Paso a water works system at each end of the city, so that the fire protection here is better than in any other city in the State of Texas, for no other city has a water works system at opposite ends of the city. The Watts plant is merely an auxiliary one, but can be put to immediate use in the event of a breakdown in the Mesa plant or any necessity for a greater supply of water than is received from the plant on the mesa. Mains of 14-inch size have been connected up with the Watts plant and have been in use during a temporary crippling of the mesa plant, occasioned by the installation of a new compressor at that point to enlarge the water supply and give El Paso the best commercial service and the best service for fires in the whole State of Texas. After the new rate goes into effect only one city in the State will approach near to El Paso in the matter of cheap insurance, and that will be Beaumont, which has a rate of 22 cents.

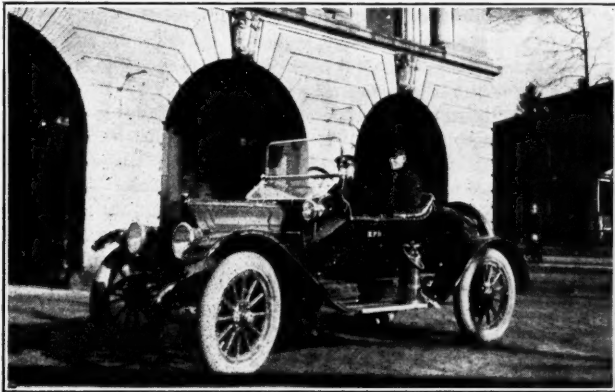
Waterbury City Hall Burns

Waterbury, Conn.—The City Hall, which cost \$200,000, and valuable records were destroyed by an incendiary fire on the afternoon of April 22. Ten other fires, 30 minutes apart and known to be incendiary, alarmed the city.

AUTO APPARATUS NOTES

Lansing and Burlington Report Good Behavior of Apparatus in Winter—Expert Chauffeur Engaged as Instructor—Value of Cheap Second-Hand Car to Department.

Elizabeth, N. J.—The second test of the new automobile fire engine of the Elizabeth Fire Department, unlike the first one, proved successful. The machine threw a good stream of water over the smokestack of the old Elizabethport Cordage Works. The stack is about 140 feet high. This was satisfactory to the fire commissioners, who accepted the engine.



Courtesy Telegraph Press, Kalamazoo, Mich.

CHIEF RUSSELL'S NEW CAR.

Kalamazoo, Mich.—The cut shows the new Michigan roadster lately received by Fire Chief Russell. The chief is seated at the right and Driver Summerville is sitting at the wheel on the left. The car is painted a bright red and is trimmed in gilt.

Paterson, N. J.—To guard against accidents with the big automobile steam fire engines in headquarters an expert chauffeur will be hired for a period of ninety days, as the result of a resolution introduced by Commissioner William A. Hopson, chairman of the fire committee of the fire and police commission. The expert will give the men a thorough course of training and when they have absolute confidence in their own ability they will be placed in the driver's seat of the big machines to run the engines. The instruction will be given on an automobile which the commission has bought, and which is now in fire headquarters. This machine is a big Thomas touring car, as large as the largest in the city, and while it cost the original owner \$6,000, its price to the commission is but \$375. To a certain extent the controlling mechanism of the Thomas car is like that of the auto steam engines. The levers and steering gear are on the same side, and the brakes are similar to those on the fire engine. Instruction purposes are not the only uses to which the car will be devoted. A wagon body is to be built by the fire department mechanics which will replace the tonneau when necessary, and it will be used as a supply wagon, similar to the automobiles in use in Newark. The wagon will be filled with coal and in case of fire will be used to carry fuel to those places where the engines are at work. In addition to this it will be used for carrying hose from the hose house to the different department buildings. This work is now done by a team. The maintenance of a team for a single year is more than the cost of the new touring car. By using the automobile the team of horses will be dispensed with.

Franklin, N. H.—Bradbury M. Prescott, Jr., who contracted with the city recently to furnish an auto fire truck for use of the fire department, now has the truck in readiness for use. The machine is a remodeled touring car upon which has been placed a fire truck body capable of holding a lot

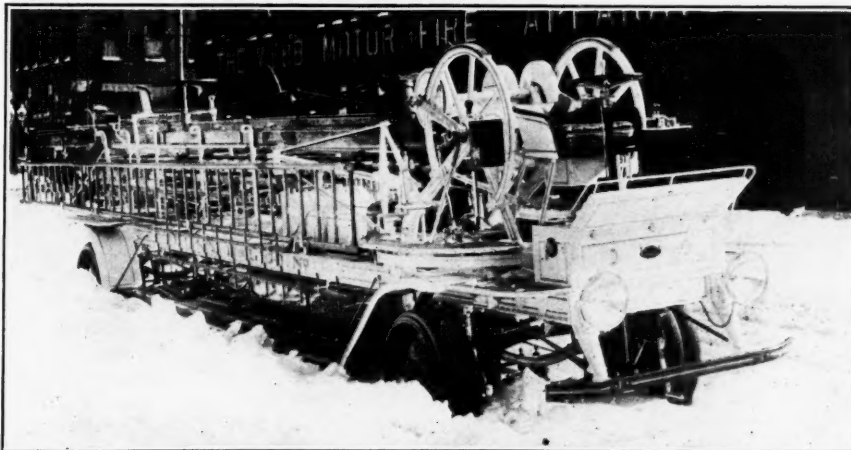
of hose, chemical extinguishers, etc., as well as facilities for carrying several men. It is finely finished and decorated and makes a very attractive looking piece of apparatus.

Washington, Pa.—Packed to its utmost capacity with 18 passengers the new Knox automobile fire truck was put through a series of severe tests under the direction of the members of the special committee appointed by Washington council to purchase the machine. The big truck worked admirably throughout the official demonstration and at the conclusion the borough officials, councilmen and others who formed the party making the trips in the auto highly praised Washington's latest fire fighting machine. The first test was for time, in which the auto, loaded with over 3,000 pounds of human flesh, made two miles and 260 feet in the fast time of four minutes and 51 seconds. The next trip was to demonstrate the hill-climbing ability of the truck and the steepest and most difficult grades of the borough were included. The tests arranged by Fire Chief Patrick Curran were run off smoothly and without the slightest mishap of any kind.

Washington, D. C.—Two hundred and forty vehicles are maintained and operated by the District government, according to a report sent by the commissioners to the Senate. The report states that the assessor's office has three carriages and one bus; the health department three touring cars, four ambulances, five wagons, two wagons and seven buggies, and the board of charities four ambulances, one buggy and one automobile which is hired when required. The police department is credited with six motorcycles, one auto patrol wagon, thirteen horse-drawn patrol wagons, three vans and one cab, while the fire department maintains automobiles for the use of the chief and the superintendent of machinery and eight buggies which are used by the fire marshal, the chief and the battalion chiefs. Automobiles are used by the engineer department in the surface, water and electrical departments, in addition to motor trucks, wagons, motorcycles and bicycles used by inspectors.

Lansing, Mich.—Fire Chief Hugo R. Delfs says the city came through the winter in fine shape with their motor fire apparatus. "We were out in all kinds of weather, in blizzards and with the temperature anything from zero to 26 below most of the winter. We have in service in our city two motor pumping engines, one motor chemical engine, two combination motor hose and chemicals, and one fire chief's motor car. At the Hotel Downey fire one of our motor pumping engines pumped water continuously for 13 hours at a pressure of 30 pounds, and the other for 10 hours at a pressure of 45 pounds, with the temperature at 12 degrees above zero. We have but one pair of horses in our department, for drawing a truck, but we intend soon to replace this outfit with a motor aerial truck."

Burlington, Vt.—Fire Chief C. A. Niles states that the combination fire apparatus owned by the department has been in service for the past 13 months. The motor has responded to 170 alarms since in service. It has often gone through from 15 to 18 inches of snow at a rate of 20 miles an hour and stood every test on the steep and hilly streets. The cost of the motor has averaged 27 cents a day.



WEBB TRUCK MADE FOR NEW YORK FIRE DEPARTMENT—LADDER LIFTED BY ELECTRIC POWER—GASOLINE-ELECTRIC PROPULSION.

GOVERNMENT AND FINANCE

Municipal Research Bureau Will Be Established

Syracuse, N. Y.—Actual work in establishing a municipal bureau of research will begin when Dr. Fred W. Lindars, of New York, starts a survey of the city with reference to its health department and charitable efforts. Dr. Lindars is the first of several officials from the New York Bureau of Research who will come to Syracuse to aid in the work the Associated Charities are backing. Others who are coming are Dr. A. E. Shipley, Henry Bruere, associate director of the New York bureau; Miss Drake, his assistant; Civil Engineer Ray and William H. Allen, director of the metropolitan organization. Dr. Lindars will work entirely on the financial side of the two departments under investigation and will make recommendations of improvements he thinks may be made. He is a certified public accountant. Dr. Shipley will consider public health and sanitation; Civil Engineer Ray will make surveys of the city for health and charity work; Mr. Bruere will investigate charity efforts, while Mr. Allen will conduct a general investigation. It is the plan to have a budget exhibit next fall showing in detail city expenditures and how economy can be practised. For this purpose a fund of \$1,000 is to be raised.

Municipal Manager Proposed for City

Hancock, Mich.—Municipal government on a business basis, under the direction of a general manager who will bear the same relation to the mayor and council that general superintendents bear to the board of directors in private corporations, was advocated for Hancock by a score of Hancock's heaviest taxpayers. The system projected will be outlined to the council at its next meeting. The business men took their idea from the Staunton, Va., method for the management of municipal affairs. In epitome the proposal is to put a general manager at the head of city business. He will have control over the street commissioner, engineers and all city employees and will report to the council as do general managers in private industrial interests to the board of directors. It is, in fact, a consolidation of city business for economy's sake. Among other things the system embodies a plan for the establishment of a municipal supply office. When supplies are needed at the pump station, by the street cleaning force or other of the city departments, an order on the supply office is made out.

Small Per Cent. of Appropriation Spent

Topeka, Kan.—Determined to stay under the budget this year, the board of city commissioners has spent less than one-ninth of the funds allowed it for the first three months of 1912. Naturally on account of the bad weather it was impossible to do very much work on the streets this year. But in the routine expenses the city officials have kept far below their allowances. If the commissioners continue their economy campaign until the end of the calendar year it is predicted at the city hall that not only the \$25,000 emergency fund but several thousand dollars will be saved to the tax payers. A little more than \$45,000 has been spent in the first three months of the 1912 funds. The budget for this year is \$407,600. This means that instead of spending one-fourth of the budget the city commissioners have spent not one-ninth of their voted expenditures.

City Purchases Must Be by Bids

Spokane, Wash.—The effort of the city commissioners to provide a procedure whereby city purchases in certain instances may be made without bids, to right the condition now existing whereby half of the city purchases, amounting to hundreds of thousands annually, are made irregularly without bids, will probably prove futile, according to developments. An examination of the charter shows that it is rigidly and specifically provided that bids and competition among merchants must be obtained on everything purchased, no matter what the cost or purpose. It is believed the city legal department will rule that no ordinance specifying a different procedure can be legally passed, as this would be an abrogation of the charter passed by the people.

\$6,912,427 City Expense Demand

Los Angeles, Cal.—The last estimates of department expenses for the next fiscal year has been filed with the City Auditor. According to the Auditor's figures the departments this year have asked for \$6,912,427. Last year they received \$5,293,960, although they asked \$6,652,881. The net increase over the amount asked this year and the amount allowed last year was \$1,618,467. It has been estimated the increase in revenue for the next fiscal year will be about 6 per cent. and that a million and a half will have to be trimmed from the department expense demands. The largest increases asked are fire department, \$306,939; fire alarm bureau, \$146,380; garbage, \$36,291, and this does not include a new incinerator; library, \$45,000; parks, \$195,600; playgrounds, \$119,500; police, \$200,000; street department, \$123,210; street lighting, \$50,534; street sprinkling, \$20,440; street sweeping, \$60,914; street tree fund, \$14,200; general expenses, \$25,000, and reserve, \$75,000.

For United States Municipal Bureau

East Orange, N. J.—A resolution has been adopted by the Republican Club of East Orange urging on the United States Congress the establishment of a municipal bureau. Reciting the fact that a large percentage of the population of the United States resides in cities, the resolution pleads that that share of the population should have as much done for it as the share that lives in the country. Such a bureau could, it is contended, delve into the water and sewer problems, prepare model charters and suggest standard accounting systems.

STREET CLEANING AND REFUSE DISPOSAL

Street Cleaning Apparatus Arrives

Lexington, Ky.—The new street cleaning apparatus has arrived and it will be put in use on the streets as soon as practicable. An expert machinist from the manufacturing company is expected in Lexington at once to see that all is ready for the machinery to be put in operation. New teams have been purchased and Mayor Cassidy said that everything possible would be done to keep the streets in the best order. The shipment includes an improved street flusher, a sprinkler and two revolving brooms.

Place Litter Cans on City's Streets

South Bend, Ind.—With the placing of 13 litter cans in the business section, Street Commissioner James P. Butler issued an appeal to the public that by using these it will assist in keeping the city clean during the summer. Instead of tossing papers carelessly about on the street the people are urged by the commissioner to place them in the cans. The cans are of metal and will hold about three bushels of refuse. More will be added as fast as needed. The street commissioner expects to educate the people to placing papers and rubbish in the cans rather than on the streets. The cans cost approximately \$2.30 apiece.

Adopts Ash Wagon with Derrick Hoist

Portland, Me.—Superintendent of Streets Clifford has put a new piece of apparatus at work on the city streets which he thinks will greatly expedite the cleaning. It is a large dump wagon with derrick hoist attachment. The derrick is used to raise the barrels containing refuse to a proper height so the contents can be easily transferred to the wagon. Heretofore the street cleaners have gathered the surface matter into piles and it was necessary to shovel it into the wagon. By the new plan the number of dump barrels will be increased and the cleaners will gather the material and leave it in the barrels. The new wagon will pick the barrels up, empty the contents and replace the barrels all in one operation, and they are ready for filling again. The wagon can do as much work as several could do handling the refuse in the old way. The central portion of the city can thus be kept much cleaner. Two men besides the driver are employed on the wagon and a large section of the city can be covered in a single day. Superintendent Clifford has purchased 150 new dump barrels which will be placed at the points where they are most needed. It was when traveling in New Haven that he saw one of the derrick wagons at work and he was so impressed with the rapidity and facility with which the work was done that he took steps to obtain a similar wagon for use in Portland.

City to Test Sanitary Flusher

Rensselaer, N. Y.—If a favorable demonstration is given by a new sanitary flusher, similar to the wagons used in Albany, which is to be tried in Rensselaer, the common council of Rensselaer will meet to discuss the advisability of doing away with the present system of letting out contracts for street cleaning. The innovation, if adopted, will, it is expected, mean a big saving to the city and, it is argued by the officials, will be productive of better sanitary conditions.

Will Treat Streets With Calcium Chloride

Rochester, N. Y.—The treating of certain of the city streets with calcium chloride will be started, it is expected, within a month. Most of the streets on which this new method will be used have macadam pavements, the experience of other cities showing that calcium chloride is more effective on such pavements, although it has been used with success on other kinds of pavements. The calcium chloride Contractor Yeoman will employ will be used as a solution and not in the dry state. It will be obtained from the Solvay Process Company. Calcium chloride, Assistant City Engineer John F. Skinner explained, is a deliquescent salt which absorbs the moisture from the air.

New Garbage Contract Calls for Sterilization

Denver, Col.—A new contract between the city and the Hog Breeders' Association providing for the removal of the city's garbage has been signed. The hog breeders agree for a period of five years to collect all garbage free of charge to the city. A \$5,000 surety bond was filed by the hog men. Before the garbage can be used as food for hogs the contract requires that it shall be sterilized under 50 pounds pressure of live steam in suitable sterilizing tanks for one hour at 212 degrees Fahrenheit. There will be four sterilizing stations, which will be under the inspection and approval of the health commissioner.

Clean-Up Day at Lafayette

Lafayette, Ind.—Through the influence of the newly organized Woman's Council, which is very active in social betterment work in the city, Lafayette has celebrated its first cleaning day. It will be an annual affair hereafter. George R. Durgan, the mayor, at the request of Mrs. Robert L. Sackett, of the Woman's Council, issued a proclamation calling on the householders of the city to clean up their premises. The city did its part in the work by sending many horses and wagons through the alleys, collecting the rubbish raked from yards and piled in the alleys. Cellars and attics were cleaned and flowers planted on bare spots and to hide unsightly fences. The Charity Organization has succeeded in obtaining the use of many vacant lots in the city and they are being turned over to poor families for gardening.

Use of Flushing Machine Satisfactory

Altoona, Pa.—Superintendent of Highways W. Fields has announced that he proposes to keep Eleventh avenue clean and free from dust during the coming summer if he is obliged to flush it every day. The sweepers will be kept on duty constantly, and as often as the conditions warrant it the flushing machine will be used and the dust washed away. The machine that was purchased by the department a year ago is giving satisfactory results and its operation is much cheaper than the old method of using hose. It cannot be used, however, when the streets are very muddy, and the department employees are at present engaged with the hose clearing the streets of the winter's accumulations. A little comparison shows the difference in the cost of flushing with the machine and with hose. It takes two men to operate the machine, and this costs 42 cents an hour, not including the upkeep of the horses and the machine, while seven men are required to use the hose, at a cost of \$1.16 an hour, and the work is hard on hose. Records of the cost of all work are kept, so at the end of each month councils can be informed of what is being done and how much it is costing. Employees of the department have commenced the work of making the necessary repairs to the block paving on Chestnut avenue below Eleventh street. This thoroughfare will be resurfaced if the proposed loan is approved by the voters on June 25, but a year or more will elapse before the work is fully completed.

Abandon Use of Water for Street Sprinkling

Taunton, Mass.—Taunton is to quit trolley sprinkling as a means of laying dust, and this year will use oil exclusively. It is probable that the emulsion oil similar to that of 1911 will be used. This decision was announced by the committee on streets and bridges after the adjournment of a session at City Hall at which the whole matter had been gone over thoroughly. The experiment of oil on Main street was entirely in favor of that method, according to the committee, and while there had possibly been some little damage when the oil was first spread, this would be obviated by using the emulsion instead of the "straight oil" preparation. The committee has been trying to get at the sentiment of the abutting owners of the property who pay the bills for sprinkling. They found few who advocated water sprinkling.

RAPID TRANSIT

Testing Ventilator for Trolley Cars

Springfield, O.—For the last ten days the Springfield Railway Company has been testing a new surface car ventilator. Three pay-as-you-enter cars were selected for the experiment, which has thus far given satisfactory results. If further trial demonstrates that the device works as successfully as it has to date, all the cars of the company will immediately be equipped with it. The new ventilator proceeds on the opposite of the theory on which former ventilators were based. Instead of forcing air into the car it aims only to drive impure air out, the contention being that as rapidly as foul air is withdrawn sufficient fresh air will enter the car through natural channels. By not driving air into a car no dangerous draughts are created. The base of the new ventilator consists of a thin board which fits into one of the old-style ventilating window spaces in the upper deck of the car. It is about 30 inches long and 6 inches wide. Running outward from this base are three small funnels so designed as to end in a letter "H." Two of the "Hs"—those at either end of the base—are upright, while the middle "H" rests on its side. Half an inch back from the face of these "Hs" slits are cut through both legs and the cross-bar. When a car is in operation, no matter from what direction the breeze comes it must pass through these slits. If the breeze is coming head on it passes through the slits in the legs of the upright "Hs" and in the cross-bar of the inverted "H." If it blows from behind it sweeps through the same slits, only, of course, in the opposite direction. Should the air currents be downward or up from the ground, then they pass through the cross-bars of the upright "Hs" and the legs of the inverted "H." When a car is in motion there is always some air stirring, for even though a flat calm prevail, the motion of the car produces a breeze. At the other end of the funnels, where they reach the base, three round holes, 3 inches in diameter, give into the car. In each hole is suspended a disc of tin, fitted so accurately that when they hang motionless they close absolutely the apertures. When the air passes through the little slits in the "Hs" a syphonage is created and the tin discs swing back and forth vigorously. The stronger the rush of the air the faster the discs swing. And with every swing of those discs impure air is drawn from the inside of the car. It is a well known fact that impure air always rises to the top of any enclosure. For this reason when the new ventilator was first tested here clouds of tobacco smoke were blown to the top of the car. The suction created by the swinging discs drew out the smoke in an instant. The Kernchen Company, of Chicago, maker of the new ventilator, has a register which shows the amount of air removed from a surface car by this new device. During a run from the transfer to the car barns—a distance of one mile—14,000 cubic feet of air were shown by the register to have been drawn out of the car. A car carrying 30 passengers can, it is declared, be kept free from carbonic acid gases by the use of only one ventilator. The Springfield Railway Company has, however, installed four ventilators in each of the three large cars with which the test is being made. Four ventilators should keep the air pure for 120 passengers; the carrying capacity of the pay-as-you-enter cars, the largest operated on the road, is only 115.

Must Begin Work Within Six Months

Ellensburg, Wash.—Construction work on the electric railroad line from Cle Elum to Ellensburg must be commenced within six months, according to the franchise granted by the county commissioners at an adjourned session. The road must be finished and in operation within two years from the time construction is started.

MISCELLANEOUS

Plant Ten Miles of Trees Along River

Kennewick, Wash.—The people of Kennewick have planted ten miles of shade trees along the bank of the Columbia river as their contribution to the State-wide observance of Arbor Day. Business in the town was generally suspended while the citizens turned out in masses for the tree planting.

Great Aqueduct Map Is Planned

Los Angeles, Cal.—A great map costing about \$25,000 and involving several months of labor in preparation, showing in detail the distribution system of the power to be developed from the aqueduct, will be drawn by the city engineer, if the recommendation of E. F. Scattergood, chief electrical engineer of the power bureau, is adopted by the city council. Scattergood believes that such a map should be made promptly in order that comprehensive work may be done by the electrical department and all concerned with the development of the power project of the city.

Mayor Asks for Full Annual Report

Dallas, Tex.—Mayor W. M. Holland has directed the attention of the heads of the various departments of the city government to the fact that the city charter requires from each of them a full annual report of work and estimates of the needs for the departments for the new fiscal year. He has suggested the collection of as much as possible of the data in advance, as the charter requires that the reports shall be in writing in the hands of the mayor not later than May 5. The charter requires that these reports shall accompany and be a part of the report of the mayor to the board of commissioners, wherein the mayor may make to the board of municipal commissioners his recommendations for decrease or increase of departmental estimates and make his estimate for the contingent fund. The tax levy for the city in the new year will be \$1.92 on the \$100 of assessed values. The additional 10 cents was voted by the people at the April election this year, a garbage disposal tax. Otherwise it is expected that the tax will vary little from the division of last year, with a possible slight increase in the interest and sinking fund to care for the recently voted bond issues. This change will be small if it is found necessary to increase the sinking fund. It is expected that the increase in assessed valuations will provide for the increase in interest and sinking fund.

Recommends Supervision of Street Plats

Providence, R. I.—Superintendent of Health Charles V. Chapin has given his approval to a resolution, later presented to the common council by Councilman Hubert F. Croghan, which provides for the securing of approval by the commissioner of public works and city engineer of street plats presented for record. Dr. Chapin in calling attention to the need of some such supervision of street plats, said: "One patent cause of unsanitary conditions in the city is the building of dwellings on platted but unbuilt streets, often far above or far below grade, where there can be no sewer and where there is often no outlet for surface water and none for traffic. Cheap houses are built upon them and landlords and tenants find nothing in their surroundings to make them other than careless. All this can be prevented in two ways: No plat of land should be recorded until it has been approved by the city engineer. Such a law has been defeated by the real estate speculators, but it ought to have a place on the statute book. The building of new streets should be paid for by the abutters, and then many streets in sad need of sewers could be laid out and put in proper sanitary condition. This law also is opposed by a large number of persons who have bought cheap land and expect the taxpayers to make it valuable by building a street for them. Both of the measures would have great influence ultimately on sanitary conditions and ought to receive the attention of the city council."

To Erect Public Drinking Fountain

Paterson, N. J.—With the consent of the Board of Public Works the Passaic County S. P. C. A. will erect a fine sanitary drinking fountain in the immediate vicinity of the City Hall, with a donation for the purpose of \$200 given by a woman patron of the society, who requests that her name be not made known. The fountain which the society proposes to erect will be of an ornamental design with a sanitary drinking arrangement for citizens, a trough so arranged that horses may drink without the driver being compelled to leave his seat to uncheck his horses and a smaller trough for use of the dogs.

Mayor to Give Fountain

Boston, Mass.—A drinking fountain for man and beast is to be erected at Huntington avenue and Francis street by Mayor Fitzgerald, in honor of his mother, Mrs. Rose Fitzgerald. The memorial is to be 12 feet long, of granite and bronze.

Appoints Shade Tree Commission

Merchantville, N. J.—A shade tree commission has been named by Mayor Longstreet, of Merchantville, for the purpose of taking care of trees on the sidewalks and public places of the village.

Douglas May Tax All Its Vehicles

Douglas, Ariz.—It is considered likely that Douglas will shortly be introduced to a new method of raising funds for street improvement purposes. If a suggestion made by Councilman O. O. Hammil is followed by the city fathers a tax upon every vehicle in the city, including all things running on wheels and using the city streets, may be imposed. Mr. Hammil urges that in other cities of the country such a tax is imposed and the money goes a long way toward keeping the streets in repair. "Douglas has no law which will permit taxation of owners of adjoining property for street improvements, such as is usual in other cities of the country," said Mr. Hammil. "I think the next best plan would be a tax upon all vehicles which use the street. The automobile tax would, of course, be the heaviest. Carriages and other four-wheeled conveyances would come next in the list and then motorcycles and bicycles. No great amount would have to be assessed against each vehicle to cause the total to reach a respectable sum which would go far in the work of street improvement." Such a tax as this may be levied soon for the work on C avenue, involving \$3,000 for grading and oiling four blocks. The money will be borrowed from the water department and will be repaid out of the next tax levy.

Issues Pocket Edition of City Ordinances

Monroe, N. C.—The board of aldermen of the city of Monroe have had the ordinances of the town revised and printed in a small booklet convenient for carrying in the pocket. They are being promiscuously distributed by the city clerk. The new edition contains just 113 ordinances.

Park Commission Preserves Old Trees

Augusta, Ga.—Tree and Park Commissioner W. Lyon Martin is inaugurating a vigorous campaign to preserve the life and beauty of the old trees in the city's streets. The recent annexation of Summerville has made this work more extensive and important, as some of the largest and oldest of the trees are located on the hill. Diseases that destroy and decay have been making vast inroads on the trees within the past ten years and some of the oldest and largest of the shade trees, those old oaks that are regarded as landmarks, are now under the tree surgeon's knife and in the hospital for repairs. A large part of the work is confined to the green in lower Broad street and the Sixth Ward. High winds have taken away limbs from the trees and left the exposed part to decay. Many large limbs have been broken away in recent years right at the trunk of the tree, and these places have largely deteriorated the growth of the tree and made the tree itself weaker. A large corps of workers are now "doctoring" the trees on lower Broad street. Where there are decayed "hollows" or spots on the trees, the wood is being cut away to where there is "life," and then well patched over so as to prevent further decaying by contact with air. Many of the "hollows" are being filled with a cement preparation. Decayed limbs are being sawed off and those nearing decay are being treated so as to restore life.

Public Fountains of Porcelain

Visalia, Cal.—Two drinking fountains are now ready to be placed at the intersections of some of the most-traveled streets of the city. These fountains were ordered by the members of the Women's Civic League and will be installed for the benefit of the public. The fountains are of pure white porcelain ware, constructed along strictly sanitary lines.

Nashville's City Beautiful Association Issues Emblem

Nashville, Tenn.—Ten thousand buttons, emblems of the City Beautiful Association of Nashville, have been delivered to the association's headquarters and the work of securing members will begin. The button is neat and very attractive. It is very small, made so in order that the most modest person wouldn't feel hesitancy about wearing one. The adult's button bears the red rose, which has a background of gold; the children's button has a silver background, in order to distinguish them. Both buttons bear the inscription, "City Beautiful, Nashville." The Belle Company, a new Nashville enterprise, has been praised for getting out this button, which was considered the best that was submitted.

Builders Will Obey

St. Paul, Minn.—Contractors and builders of St. Paul, asked how the new order of the police to keep sidewalks clear of obstructions would affect them, were of the opinion that if the order compels the construction of false work over sidewalks they would abide by it without objection. One well-known contractor admitted that the narrow streets of St. Paul, especially in the downtown district, often were congested through building operations. He said it was possible that the contractors would provide suitable protection for pedestrians by erecting platforms overhead so that the sidewalks would not be blocked. This would cause little expense, as the specifications for constructing buildings would include the cost of constructing false framework over the sidewalks. Contractors admit that in other cities, especially in the East, ordinances compel the construction of such platforms. Buildings already commenced, will not be interfered with. It is almost impossible to erect such platforms on buildings already commenced, it is said.

Install Fine Drinking Fountain

Youngstown, O.—A new fountain is being erected in the Diamond. The fountain, a beautiful bronze embellishment, is the gift of the Sunday-school pupils of the First Unitarian Church and is being installed under the supervision of Park Commissioner Lionel Evans. In their zeal for better drinking accommodations the pupils of the Unitarian Sunday-school, but few in number when compared with other congregations, set out last summer to provide a suitable fountain for one of the playgrounds. The enthusiasm became contagious and soon the idea had been enlarged to a fountain for the Diamond. Pupils sacrificed many pleasures, including the annual outing, Christmas treat and other features which mean so much for children. Pennies soon grew into dollars until recently when a large bronze fountain was purchased. The expenditure was \$250. Sanitary cups and a new cooling system will be a feature of the fountain. The total cost when installed will be \$400. Charles F. Henry has the contract for setting up the fountain and has already completed the concrete base. The fountain measures to the top of the ball at its summit just 7 feet 8 inches; base 2 feet 7 inches square. Height to the top of the bowls is 3 feet 5 inches. A self-closing drinking nozzle, sanitary, practical and economical, will be used during the warm weather months; the regular flowing cup in the winter. The self-closing cup is oval in shape with smooth surface, thus precluding the possibility of adherence or lodgement of disease germs. It is self-closing and does not waste water, as it flows only when used. A slight pressure of the hand opens the supply valve, then the water bubbles up from the nozzle as though it came from the natural spring, clear, pure and uncontaminated. When the pressure on the ring is withdrawn the valve closes. The present well on the north side of the Diamond will be used to cool the supply. Director Evans states that 600 feet of block tin coil will be placed in the bottom, providing what he hopes will prove an excellent cooling system.

Establish Bureau for City Gardens

Cleveland, O.—Hundreds of acres of city lots will be utilized for gardening purposes this summer if the plans of the Home Gardening and School Gardening associations work out as expected. Every available space will be turned into a garden and will be worked by private citizens for their own use. By unanimous vote city council has adopted a resolution calling for the establishment of a city bureau to be devoted to the interests of Cleveland residents who desire to raise vegetables on lots near their homes. Assurance of the support of the Home Gardening Association, the school authorities and lot owners has already been obtained and now, with the backing of the city administration, great success is expected. The bureau established by council will keep a record of land offered for use for gardening and will take steps for parceling out and allotting such land to those who wish to make use of it for cultivation purposes.

Jersey City to Hold "Know-Your-City" Week

Jersey City, N. J.—There will be many surprises among the exhibits for Know-Your-City week which are being prepared by the municipal departments. The idea of the officials is to give the people of the city as complete an idea as is possible of how they are served. The Street and Water Board started over a week ago to prepare its exhibit. The force in Chief Engineer Van Keuren's office is at work preparing charts and maps to display the activities of the department. There will be a large map showing every sewer and water pipe, every fire hydrant and every electric light. There is some talk of having the lights shown at night upon the map with small incandescent bulbs burning. Engineer La Tourette is making the star exhibit, which will be a complete model of the Boonton Reservoir with the pipe line and all appurtenances from Boonton to Jersey City. This model will be drawn to scale and will be seven feet by fifteen feet in size. After the Know-Your-City week exhibit at the Armory the model will be put under glass and placed in the Free Public Library as a permanent exhibit. Engineer Van Keuren is also having prepared models of street cross sections, which will be perfect in every detail, showing the various kind of pavements, with their foundations, the sewer pipes, water pipes, gas mains, telephone and telegraph conduits and all other things beneath the surface.

Ordinance to Regulate Use of Concrete and Reinforced Concrete

Pittsburgh, Pa.—A draft of the city ordinance regulating the use of concrete and reinforced concrete, prepared by a committee appointed by the Commission for the Revision of the Building Laws of the city of Pittsburgh, is to be presented to council within a few days. The draft is now being distributed for criticism before the measure is adopted by council. Those having alterations to suggest will be given a hearing before May 1, at which time it is proposed that some action be taken. The committee which drafted the measure is composed as follows: Edward Stotz, architect, chairman; F. H. Kindl, engineer; F. A. Russell, architect; Joseph A. Weldon, plumber; D. P. Black, real estate; S. N. Murphy, builder; William S. McDowell, attorney. The measure covers all forms of concrete used in building, such as general conditions, materials, design, data for calculation, construction details, forms and piling. The more important parts of the draft follow: Before a permit is issued for the construction of any reinforced structure complete plans must be filed with the city building inspector, signed by the proper builders; the work must be under a competent officer. A certificate that the cement used in the work is of the proper strength and has withstood the proper tests, in accordance with the standard methods presented by the American Society of Civil Engineers, must be presented and filed. The use of slag or cinders from bituminous coal will not be permitted for reinforced concrete construction. The water used in mixing must be free of dirt, oil, grease, strong alkalis, mud, acid or vegetable matter. Steel for reinforcement must be made by the open hearth or Bessemer process. Off heats of steel shall not be used. In all mixing the separate ingredients shall be measured for each batch and shall be thoroughly mixed and uniform in color. All concrete shall be mixed in a mechanical batch mixer one complete batch at a time.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Defective Sidewalks—Personal Injuries—Excessiveness

Pullen vs. City of Butte.—Whether an inequality of from four to six inches in the height of the abutting ends of two pieces of sidewalk constitutes such a dangerous defect as to subject the city to liability is a question of fact. A woman, 63 years old, had her arm broken, and was hurt and bruised, by a defective sidewalk. For eight or ten months and occasionally thereafter she was unable to use her hand, and there was evidence that the injury was permanent. She had suffered, and at the time of the trial still occasionally suffered, pain. Held, that a judgment for \$5,000 was excessive, and would be reversed unless plaintiff consented to a reduction to \$3,000.—Supreme Court of Montana, 121 P. R., 878.

Ordinances—Approval—Acting Mayor

Dimick vs. Barry, Mayor, et al.—During illness of a mayor the city council passed an order laying out a street. Cambridge City Charter requires the mayor to approve or veto ordinances within 10 days after presentation; and Revised Laws give the president of the board of aldermen powers of the mayor during his incapacity only as to matters not admitting of delay. Held, that the order in question was not one which the acting mayor had authority to approve, being one which in its very nature admitted of delay, and the approval of the acting mayor does not validate the ordinance.—Supreme Judicial Court of Massachusetts, 97 N. E. R., 909.

Defects in Streets—Liability

Cohen vs. City of New York.—A city failing for about four hours to remedy or guard a defect in a street, not extraordinarily dangerous, caused by a storm of almost unprecedented severity, after the discovery of the defect by a policeman is not guilty of negligence rendering it liable for injuries to a traveler, caused by the defect; it not appearing that the locality was central or much traveled.—Court of Appeals of New York, 97 N. E. R., 866.

Defective Sidewalks—Liability

City of Indianapolis vs. Ray.—A city, in the absence of actual notice, is liable only for such defects in sidewalks as are apparent, or are suggested by appearances, or which are disclosed by a test in the nature of the ordinary use thereof; but it need not search for a defect existing in the foundation of a sidewalk.—Appellate Court of Indiana, 97 N. E. R., 795.

Liability for Injuries—Unforeseen Accident

McPherson vs. City of New York.—A city owned and was in control of a bridge over which a railroad company operated cars. It was the custom to open the upper sash of the windows in the terminal building at one end of the bridge, allowing them to hang down from the hinges, and to allow them to remain open continuously during the summer period. During a wind storm an employe of the railroad company closed one of the windows, and it fell a few minutes later, injuring plaintiff. Held, that, as a matter of law, an ordinarily prudent person would not have anticipated any danger from leaving the windows as they were left by the city, and hence that the submission of the case to the jury was error.—Court of Appeals of New York, 97 N. E. R., 876.

Bids—Failure to Perform—Liability of Surety

City of New York v. Seely-Taylor Co. et al.—Where a bidder for public works deposited a certified check as a guaranty that it would enter into a contract, and also a bond for performance of the contract, in case it was let to it, or for payment of the difference between the bid and any subsequent contract let by the city on failure of the bidder to enter into the contract, but later withdrew the bid because of mistake and refused to enter into a contract, after which the check was returned, the city could not recover the amount of the check in a subsequent action against the contractor and its surety on the bond to recover the difference between the bid and the amount the city was compelled to pay for the work on readvertisement.—New York Supreme Court, 133 N. Y. S., 808.

Telegraph Poles—Compensation—Reasonableness

City of Springfield v. Postal Telegraph-Cable Co.—An ordinance compelling the payment of \$1 per year for each pole or post occupying any portion of a public street, alley or sidewalk "as remunerative to the city" is not invalid as a license fee against a telegraph company doing an interstate business, but is proper as a charge in the nature of a rental for the use of the streets. An ordinance fixing a charge of \$1 per year for the use of public streets for telegraph poles, etc., is presumed to be reasonable, and, in an action against a telegraph company to recover the charge, the burden is on the defendant to prove its unreasonableness.—Supreme Court of Illinois, 97 N. E. R., 673.

Bonds—Issuance—Popular Vote

Byrns v. City of Moscow et al.—Where streets are paved and the assessments are made against the abutting property according to the benefits, as provided in Revised Codes, improvement district bonds may be issued by the city upon the council passing proper ordinance authorizing the same without submitting the question of issuing the bonds to the electors or taxpayers of either the improvement district or the city, but where the cost and expenses are to be paid by the city, and bonds are to be issued for the purpose of raising revenue to pay the same, then such question must be submitted to the electors and taxpayers of the city, and must be by them authorized by proper vote.—Supreme Court of Idaho, 121 P. R., 1034.

Defective Street—Negligence

Robinson v. Salt Lake City.—In an action for injuries to a traveler on a defective street, evidence held to justify a verdict that an employe of the water works department of the city, lawfully digging an excavation in the street, negligently failed to fill it in a proper manner, and that the unsafe condition was due to his act and not to the act of a trespasser.—Supreme Court of Utah, 121 P. R., 968.

Officers—Discharge—Hearing

Rowell v. City of Battle Creek.—One appointed police matron of a city under Comp. Laws, providing for the appointment of a police matron for an indefinite term, subject to removal for cause, is removable only for cause on notice and a hearing.—Supreme Court of Michigan, 135 N. W. R., 79.

Refund or Recovery of Tax

Town of Durant v. Attala County.—Laws 1886, which provided by section 1 that, when certain bridges and turn-pikes should be made free, the county supervisors should set apart all bridge taxes collected in a town opposite the bridge, and turn over a list of the bridge tax collected to the county treasurer, who, on demand, should pay such taxes to the town treasurer, to be appropriated to the repair of such bridges, and by section authorized the county supervisors to direct such payment, was amended by Laws 1888 so as to make such payment by the supervisors mandatory, and subsequently, and before any money had been paid to such town, the laws of 1886 and 1888 were repealed by Laws 1892, without any saving clause. Held, in the town's mandamus proceeding, brought after the repealing act, to compel the county supervisors to require the county treasurer to pay over to the town treasurer a certain sum as a refund of such taxes, that the repeal of the earlier laws carried with it all rights and remedies given thereby, and that there was no authority left for any legal demand on the county.—Supreme Court of Mississippi, 57 S. R., 914.

Accident to Employe of City Lighting Plant

Terrell v. City of Washington.—A lineman employed by a city, which was operating an electric light plant, was not chargeable with negligence for failure to inspect a pole before climbing it, especially where the defect was below the ground and would not have been discovered except by digging, since he was given an implied assurance that it was safe when he was ordered to climb it.—Supreme Court of North Carolina, 73 S. E. R., 888.

Streets—Repair—Duty of City

City of Evansville v. Behme.—A city was under an obligation to have a street rendered dangerous by an excavation made by a private person, but under its authority refilled so as to permit safe traffic, and is negligent for failing to do so or to warn the public by guards, lights, etc., until the excavation was refilled.—Appellate Court of Indiana, 97 N. E. R., 565.

NEWS OF THE SOCIETIES

International Association of Municipal Electricians

The 17th annual convention of the International Association of Municipal Electricians will be held in the Hotel Jefferson, at Peoria, Ill., on August 26 to 30, 1912.

The International Association of Municipal Electricians is composed of municipal electricians from all parts of the United States and Canada, as well as from Cuba and South America. Its objects are the acquisition of experimental, statistical and scientific knowledge relating to the constitution, equipment and operation of fire and police telegraphs, light, heat and power systems, and the diffusion of this knowledge among the members of the association with a view of improving the service and reducing the cost thereof, and the establishment and maintenance of a spirit of fraternity among its members.

The annual conventions have proved to be the source of much benefit to the municipalities represented by the members of the association and to the country at large through the information given out in the form of papers and discussions. These papers relate to matters of great importance to municipal electricians and their work, and are of the most practical kind, because they are prepared by practical men.

The officers of the association are: John W. Kelly, Jr., chief of electrical bureau, Camden, N. J.; vice-presidents, John Craig, superintendent fire alarm, Toronto, Canada; W. L. Riehl, superintendent of electricity, Indianapolis, Ind.; secretary, Clarence George, city electrician, Houston, Tex.; treasurer, Clark E. Diehl, superintendent fire and police telegraph, Harrisburg, Pa.; chairman executive committee, W. E. Wolgamott, city electrician Peoria, Ill.

Indiana Municipal League

The committee which met at the Denison Hotel, Indianapolis, April 17, to arrange a programme for the annual meeting of the League at Hartford City, changed the date of the meeting and it will be held on July 9, 10 and 11. The first session will be held on the afternoon of July 9. Mayor Thomas E. Knotts, of Gary, will speak on "The Building of a City," and Thos. B. Gregory, city attorney of Madison, will lead the discussion. Another address at the first session will be, "How Should School Trustees Be Elected, and What Powers Should They Have?" James Schooler, city controller, Lafayette. Discussion by Hamlet Allen, member of city council, Washington.

John Herzog, mayor of Mishawaka, will talk on "The Lighting of a City" in the evening, and Charles A. Greathouse, State superintendent of public instruction, will talk on "Industrial Education." Dr. E. A. Rumely, of Laporte, will discuss the latter subject.

On the following two days of the meeting the programme will include the following addresses:

"Does the 2 Per Cent. Inhibition of Indebtedness in the Old and Proposed New Constitutions Operate Against Municipal Ownership in Cities and Towns?" Judge Lawrence Becker, Hammond. Discussion by Finley P. Mount, city attorney of Crawfordsville.

"Should the Proposed Amendment to

the Street Improvement Laws Be Adopted?" B. H. Campbell, city attorney, Elwood. Discussion by Timothy E. Howard, South Bend; James W. Fortune, city attorney, Jeffersonville; Roy Shattuck, former mayor Brazil; Finley P. Mount, city attorney, Crawfordsville, and H. W. Klausmann, city engineer, Indianapolis.

"The Milk Supply of a City," Dr. W. G. Swank, Crawfordsville. Discussion, H. E. Barnard, State food and drugs commissioner.

"Track Elevation and Grade Crossings for Cities," Harry G. Hogan, city attorney, Ft. Wayne, and Robert E. Proctor, city attorney, Elkhart.

"District Workhouses for Municipalities," J. W. Milligan, deputy warden of the State prison at Michigan City. Discussions led by W. H. Eichhorn, Bluffton.

"What is the Most Economical and Lasting Street Paving for Residence Districts?" A. M. Gardner, city attorney of Richmond; discussion led by Dr. W. E. Hess, Plymouth.

"Should All Cities Have Markets?" Mayor Shank, Indianapolis. Discussion led by A. B. Cooper, Columbus.

"Should Cities Have an Official Sealer of Weights and Measures?" Thomas E. Carmichael, mayor of Aurora.

"How to Beautify a City," Dr. E. C. Lehr, Noblesville. Discussion led by Roy Johnson, Logansport.

"Would It Tend to Elevate the Standing of Municipal Officers to Eliminate Politics?" City Attorney Bumbaugh, of Frankfort. Discussion led by E. O. Rogers, mayor of Lebanon.

"What, If Any, Change Should Be Made in the Present Cities and Towns Law?" Warren N. Hauck, city attorney of Lawrenceburg. Discussion led by J. C. Travis, city attorney of Laporte.

Officers will be elected on the last day of the meeting.

Union of Canadian Municipalities

Secretary-Treasurer M. D. Lighthall has issued the following notice:

The dates of the twelfth annual convention of the Union of Canadian Municipalities have now been fixed for August 27, 28 and 29, at the City Hall, Windsor, Ont., by invitation of His Worship the Mayor and City Council.

The city of Windsor has also arranged for a cordial invitation from His Honor the Mayor and City Council of Detroit, Mich., which is equally cordial, and those attending will thus have the advantage both of meeting in one of our sister Canadian cities, and also of studying one of the largest and most interesting of American cities. These combined opportunities have already aroused great expectations from the membership of the union and a highly satisfactory convention is expected.

The Union of Canadian Municipalities has the honor of inviting your municipality to participate and to send as many delegates as you desire, and would emphasize the fact that such meetings are of great use to every municipality taking part. They afford the best practical means of learning at first hand of tried, up-to-date improvements; while at the same time they afford the only effective link of solid and widespread combination by municipalities for protection against men and influ-

ences adverse to the interests of the people.

The Union of Canadian Municipalities has now a long period of faithful and powerful service to the people, and of many large and important results; and is constantly at work along the same lines, and introducing new ideas wherever sound ones may be found. It is in constant communication with municipal associations all over the world, especially in the United States and Great Britain.

Some of the subjects that will receive special attention at the convention will be: "The Price of Cement;" "Distribution of the Cost of Subways and Other Railway Crossings;" "Water Powers in General and Georgian Bay Canal Water Powers;" "Uniform Municipal Statistics;" "Electric Franchises;" "Health and Mortality;" "Sewer Systems;" "Filtration of Drinking Water;" "Commission Government;" &c., &c.

Asheville and Buncombe County Good Roads Association

This association, which was organized in 1899, has accomplished so much that a brief account of its history and methods is of general interest.

Immediately after the organization of this association it raised \$5,000 by subscription and regraded and macadamized the road from Asheville to Biltmore, a distance of a little more than two miles. This one piece of work in itself demonstrated to the citizens that good roads could be built in the mountains, and it stimulated all thinking citizens to further effort.

At the present time macadam and sand clay roads have been and are now being actively constructed throughout the entire region in western North Carolina, there already being hundreds of miles of splendid hard-surfaced roads winding about the mountains, across hills and valleys from one section to another. The immediate territory surrounding Asheville is covered with a veritable network of good roads which are of the greatest benefit to the farmers of the country and to the business people of the city, and of especial advantage in attracting throngs of visitors to the resorts.

The work of this association has been to stimulate interest in good roads and to push a general policy of road education in city and county; to suggest new laws and remedies when needed; to see that roads are relocated and hills avoided; to instruct and point out the advantage of better grades and better drainage; to point out defects in methods and actual practice of building and repairs; to open up new roads to points of interest; to inspect roads and bridges and acquaint the county commissioners with conditions found; to generally keep the citizens informed as to what other wide-awake communities are doing; to make good roads addresses and to distribute good roads literature; in fact, to keep up an active and aggressive campaign for road betterment.

The organization has settled disputes between property owners where roads have been relocated, widened or graded, thus saving court proceedings. They have acted as arbitrators where usually juries had to be appointed for condemnation proceedings; they legally widened one of the main thoroughfares from a 20-foot road to a uniform width of 50 feet, without litigation, and afterwards raised sufficient money by subscription to macadamize this road.

They have placed road signs in various parts of the county and have erected sign boards and mile posts all over the county; they have regularly inspected the paved streets of Asheville and called the attention of the Board of Aldermen to places needing repair; they have bought road scrapers for their own use with the result that the example has been instrumental in others being purchased; they own their own tools for road work; they have blasted cliffs and ledges; they have erected guard rails and board fences on dangerous places on the mountain roads; they keep a paid secretary; they have seen that road taxes were collected; they have had private roads opened to the public; they have had gates removed; they have built horseback trails to the high mountain peaks; they have erected watering troughs in places where horses most need water; they took up the question of clean city streets, of garbage cans, of waste paper receptacles, of sprinkling and of flushing.

Louisiana Engineering Society

At a regular meeting in the society's rooms, 124 Carondelet street, New Orleans, certain proposed amendments to the State regulations for men practicing civil engineering were discussed.

The society will propose at the coming session of the State legislature certain amendments to the act at present in force regarding the regulation of the practice of the profession of civil engineering in Louisiana. An amended act containing fifteen sections, in place of the fourteen sections of the act in force, was presented for the consideration of the meeting by John F. Coleman. The principal change urged is the introduction of a section requiring engineers in the State to register annually before February 1, renewing their licenses by such registration and by the payment of a fee of \$3, or, for a surveyor, \$1. In the revised act read by Mr. Coleman a penalty for failure to comply on time is put at \$25 for engineers and \$10 for surveyors.

Another important change is the addition of a clause the effect of which will be to make it impossible for any engineer not licensed under the Louisiana laws, whether he be licensed under other State laws or not, to practise in the State. It was urged in favor of this that it would protect the profession from charlatanism and assure the public of the qualifications of engineers.

It was decided to be the sense of the meeting that the amendment embodied needed changes in the State regulations regarding the practice of engineering within its borders.

Montana Society of Engineers

The twenty-fifth annual convention was held at Anaconda April 12-13. The following officers were elected: R. A. McArthur, president; John H. Klepinger, first vice-president; Reno H. Sales, second vice-president; Clinton H. Moore, secretary; Sam Barker, Jr., treasurer; George A. Packard, Sam Barker, Jr., and Clinton H. Moore, trustees.

Among the papers presented were the following: "Hebgin Dam," by H. H. Cochrane, Butte; "Good Roads," by Prof. Robt. D. Kneale, of the State college, and "History of the Montana Society of Engineers," by Prof. Clinton H. Moore. A visit was made to the Washoe copper smelter and the Bradley and Peck plants. The delegates were also given an exhibition of digging ditches by dynamite.

PERSONALS

BRAYAND, CHAS., Union Hill, N. J., has been appointed chief of the fire department.

CROWELL, J. FOSTER, New York City, has been appointed consulting engineer of Queens Borough.

JENNEY, J. W., Des Moines, Ia., has been appointed chief of the police department.

LYONS, THOS. F., Watertown, Mass., has been elected chief of police. Captain Lyons has been on the force for 28 years.

THOMAS, BURR H., Grafton, W. Va., has been elected chief of police.

VAN NOSTRAND, JAMES S., Sea Cliff, Long Island, N. Y., has been re-elected chief of the fire department.

The following mayors have been elected:

MISSOURI.

Kansas City—Henry L. Jost.
Webb City—W. V. K. Spencer.

ARIZONA.

Wickenburg—C. M. Shanon.

NEW MEXICO.

Roswell—W. M. Atkinson.
Santa Fe—Celso Lopez.

COLORADO.

Akron—Frank Bloom.
Carbondale—J. W. Zimmerman.
Eaton—T. C. Phillips.
De Beque—Lambert Sternberg.
Frederick—Jack Burkhardt.
Basalt—J. R. Scandlon.
Holyoke—Leon Ketler.
Brush—Turner.
Manitou—Wm Lennon.
Yampa—Ira Van Camp.
Hayden—B. C. Humbert.
Grand Valley—M. H. Street.
Central City—Thomas Cody.
Nevadaville—Thomas Roberts.
Hugo—E. I. Thompson.
Silverton—B. B. Allen.
Pagosa Springs—A. J. Nassaman.
Berthard—John Bunyon.
Evans—E. W. Balford.
Aquilas—A. I. Lindsey.
Littleton—John B. Mayers.
North Longmont—Frank Swartz.
Lyons—E. P. Sweeney.
Buena Vista—G. K. Hartin.
Fruita—W. L. Merrifield.
Olathe—Chas. E. Lockwood.
Walsenburg—J. B. Dick.
Georgetown—H. G. Haeseler.
Altman—Samuel Thompson.
Anaconda—Ira D. Bucles.
Breckenridge—R. C. Duncan.
Riddaway—Ira Culver.
Collbran—S. A. Blonn.
Oak Creek—Dr. Chas. A. Pankey.
Castle Rock—Thorwale Christensen.
Ault—G. A. Hill.
Dacono—James Perkins.
Ward—J. E. Lee.
Windsor—G. H. Frye.
Brighton—C. S. Stewart.
Platteville—Andrew Lang.
Nunn—S. Hobart.
Alma—Wm. Frazer.
Montezuma—John Lund.
Dillon—C. C. Warren.
Frisco—Henry Hickman.
Fairplay—M. I. Omelia.
Ordway—H. C. Tiedman.
Steamboat Springs—Loren G. Blackmer.
Lafayette—Thos. Faull.
Louisville—Tom Williams.
Superior—Richard Seeley.

MINNESOTA.

Duluth—Joseph S. Konkel.
Ely—M. Weinzeirl.
St. Cloud—Peter J. Seberger.

MONTANA.

Helena—R. R. Purcell.
Hamilton—Harry S. Robinson.
Walkerville—Joe Briney.
Havre—D. S. McKenzie.
Red Lodge—Daniel Davis.
Kalispell—D. R. Peeler.
Whitefish—H. T. Mayfield.
Sheridan—A. M. Maddison.
Missoula—James A. Rhodes.

WISCONSIN.

Marinette—Josh Fisher.
Algoma—M. W. Tarry.
Sparta—Chas. McMillan.
New Richmond—Henry M. Fraiser.
Platteville—John Hoosier.
Jamesville—James A. Fathers.
Cumberland—S. W. Hines.
Jefferson—J. J. Spangler.
Edgerton—A. C. Skinner.
Oshkosh—John Mulva.
Ripon—S. G. Kellogg.
Neenah—C. B. Clark.
Washburn—H. H. Peary.
Green Bay—Winford J. Abrams.
Marshfield—Robert Connor.
Waupaca—A. R. Lee.
Shawano—Dr. B. Royer.
Richland Center—C. L. Lincoln.
Tomahawk—A. E. Sutliff.
Juneau—H. F. Berite.
Hoxicon—Chas. Hawks.
Superior—Joseph Shonkel.
Fort Washington—H. W. Bolens.
Dodgeville—W. P. Peters.
Mineral Point—Edw. Brown.
Madison—John B. Heim.
Waukesha—H. W. Wilburn.
Oconto—A. Caldwell.
Kenosha—Dan O. Head.
Watertown—Herman G. Grube.

Calendar of Meetings

May 14-17.

National Fire Protection Association.—Annual Meeting, Chicago, Ill.—F. H. Wentworth, Secretary, 87 Mill Street, Boston, Mass.

May 16-18.

Ohio Society of Mechanical, Electrical and Steam Engineers.—Annual Meeting, Pittsburgh, Pa.—F. E. Sanborn, Secretary, Ohio State University, Columbus, O.

May 28-31.

American Society of Mechanical Engineers.—Special Meeting, Cleveland, O.—C. W. Rice, Secretary, 29 W. 39th Street, New York City.

May 27-29.

Fourth National Conference on City Planning.—Meeting, Public Library, Boston, Mass.—Flavel Shurtleff, Secretary, 19 Congress Street, Boston, Mass.

June 3-8.

American Water Works Association.—Annual Convention, Louisville, Ky.—John M. Diven, Secretary, Troy, N. Y.

June 11-12.

Police Chiefs and City Marshals' Association of Texas.—Convention, San Angelo, Tex.

June 10-12.

Mayors Conference of New York.—Third Annual Meeting, Utica, June 10-12.—Mayor C. C. Duryee, President, Schenectady, N. Y.—C. C. Capes, Secretary, New York.

July 8-12.

National Municipal League.—Annual Meeting, Los Angeles, Cal.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

June 10-14.

National Electric Light Association.—Annual Meeting, Seattle, Wash.—T. C. Martin, Secretary, 29 West 39th street, New York City.

September 18-19.

New England Water Works Association.—Thirty-first Annual Convention, Washington, D. C.—George W. Batchelder, President; Willard Kent, Secretary.—Headquarters, Boston, Mass.

September 24-26.

Central States Water Works Association.—Sixteenth Annual Convention, Detroit, Mich.—R. P. Bricker, Secretary, Shelby, O.

MUNICIPAL APPLIANCES

Waterproof Jointing Material for Sewer Pipe

The Marbleoid Company, 34th street and Broadway, New York, N. Y., have placed on the market under the trade name of Jointite a compound for making waterproof joints in sewer pipes which has a number of other advantages. Jointite is heated and poured in a manner similar to the practice in handling lead, except that no calking of the material is necessary, as it adheres tenaciously to a smooth surface. For example, when poured upon a plate glass surface it adheres so firmly as to make it impossible to separate it in any other way than heating.

The value of such a material in sewer work is well known, as it prevents the infiltration of water, making it unnecessary to construct a line of greater capacity than that necessary to carry the sewage. The inconvenience of handling unnecessary water at pumping stations and disposal plants is also avoided. Moreover, it avoids the danger which exists under some conditions of leakage of sewage into wells or other water supplies.

For the construction of water mains this material is also recommended by the manufacturers as it makes joints of sufficient strength to withstand ordinary pressure. At actual tests, six-inch pipe lines jointed with this material have successfully withstood pressures of 400 pounds per square inch.

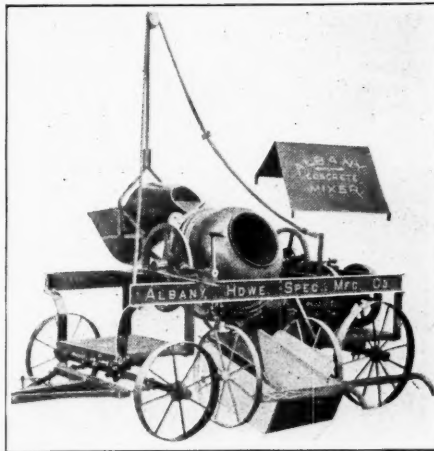
The elasticity of Jointite permits deflection of pipe lines without danger of breaking and overcomes as well the serious effects of expansion and contraction. In connection with this subject it may be mentioned that about 80 per cent. of the leakage from lead jointed pipes has been attributed to this cause.

Jointite is durable because it contains no volatile or other oily ingredients and is not affected injuriously by any chemicals to which it is likely to be subjected. It can be poured into wet joints or into joints actually under water. It sets at once upon cooling. The material is claimed to be economical in use, requiring no skilled labor.

Expense is saved in running joints, pumping trenches and in excavation. Defective joints due to accidental deflections of the line do not occur. A large amount of jute and relatively small amount of Jointite may be used. It weighs one-seventh as much as lead and costs less per pound. Very good reports have been made by engineers, who have tried this material.

Small Batch Concrete Mixer

The Albany Hardware Specialty Mfg. Co., Albany, Wis., have placed on the market a concrete mixer designed to meet the demand for a small, rather low-priced machine of the batch variety.



NEW BATCH CONCRETE MIXER.

riety. The machine is adapted to the smallest jobs for which power mixers are used, yet is capable of handling a fair-sized piece of work. The company have used the machine on their own work for a number of years and state that with it they have mixed 500 cubic yards of concrete in five days. The machine weighs 2,200 pounds.

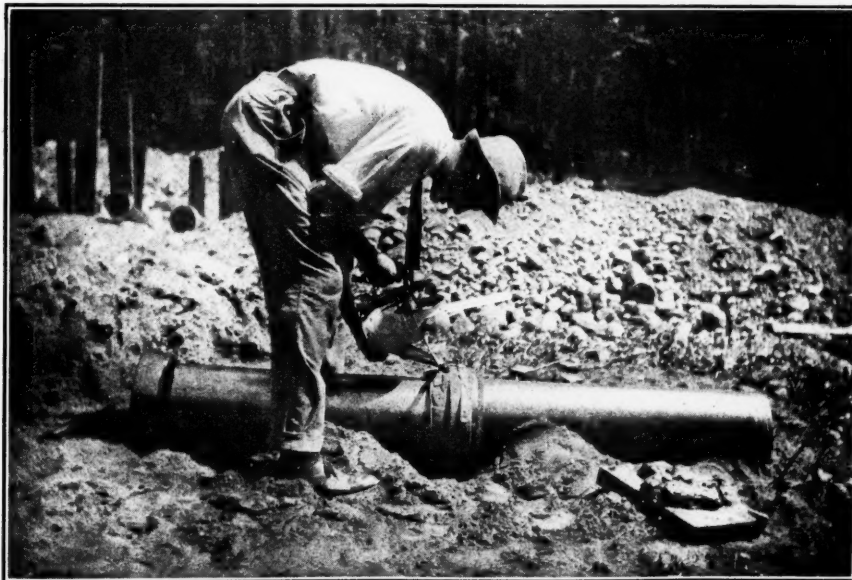
As shown in the illustration the compactness of the outfit and its completeness and portability are the striking features. The engine is close to the mixer, there is a hoisting arrangement

for loading, and the discharge is high enough to deliver into a concrete cart or wheelbarrow.

In operating the mixer the engine is started, the mixer is thrown into gear, and while the drum is in working position, that is, tipped forward toward the dumping crank, the operator throws in a pail of water, or such amount as he finds necessary. The drum is then turned back with the dumping crank into loading position and locked. The loader, in the meantime having been filled with the proper amounts of sand, gravel and cement, is tipped into the drum by the operator and returned for refilling. The drum is then swung forward into working position and more water added if necessary. The batch is usually thoroughly mixed in one-half to one minute.

The Stepless Street Car

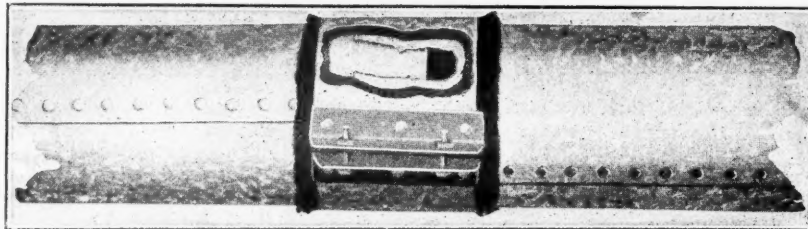
The primary objects of the "Stepless" car are the prevention of accidents and the reduction of time in loading and unloading. It is the step and door arrangement, and principally the step, which has chiefly to do with the safety of passengers and the time consumed during stops. As the floor of the car is but 10 inches above the pavement, no grab handles are needed and passengers mount and alight without effort or hesitation. The conductor, being at the center of the body, can observe and control the movement of passengers to the best advantage. With the doors at the center of the car, the average distance which passengers must traverse in getting to the exit is materially reduced. The conductor, being at the center and in the car body instead of being at the end and outside the bulkhead, makes it easy for him to be heard in all parts of the car when calling streets, which is also a factor in reducing delays. While the entrance is divided at the center, it is not intended to keep one side for entrance and the other for exit, as at the principal collecting points in New York few passengers leave the car and at the principal discharging points few enter. At intermediate points, where but few are getting on and off, the conductor can with little effort divide the outgoing and incoming passengers so that the separate passageways can be used simultaneously. The easy and quick entrance and exit of passengers enables the reduction of width of the side opening, which increases the floor space for seating without being a detriment to loading and unloading. In comparison with a car of the same length over the vestibules and having 6-foot platforms, the "Stepless" car increases the seating capacity by 9; in other words, in the "Stepless" car the center entrance section and the motor-man's cabs occupy 9 feet 1½ inches of linear measurement, while the platforms of the prepayment car of average type are 6 feet long, or 12 linear feet occupied, making a difference in favor of the "Stepless" car of about 3 feet, or two additional passengers to each side, and, with two extra places gained at each end by the semi-circular seats, and the folding seat for one passenger at the center, accounts for the 9 additional seating places. The car illustrated accommodates 51 seated passengers. The doors are opened and closed by a foot pedal which operates an air valve, or can be manually operated by a lever. The floor of the motor-man's cab is about 6 inches higher than the ordinary platform, giving the "Step-



MAKING WATERPROOF AND ELASTIC JOINT WITH JOINTITE.

less" car an advantage in this respect, and the narrowing of the car ends, together with the large side windows of the cabs, provide an unusually wide outlook. An upholstered spring seat with back is provided for the motorman to lessen fatigue.

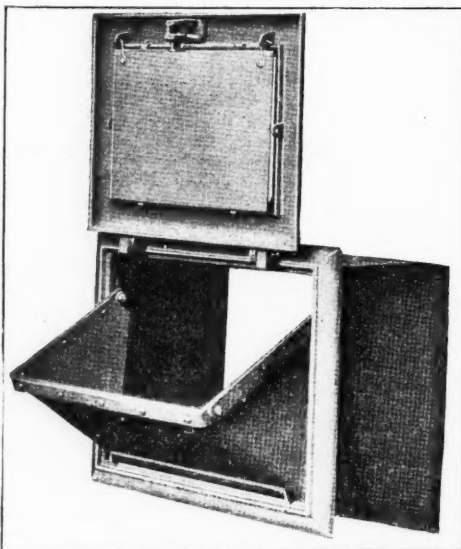
The chief difficulty involved in planning the "Stepless" car was to provide for the radiation of the trucks under the body and still secure a seating arrangement with all the seat cushions approximately on the same level. A modified form of the Brill standard single-motor truck was found to be best suited to the purpose and was redesigned to include a low-carried truck bolster. The pony wheels are 19 inches in diameter and the clearance for maximum radiation on curves is amply provided by housings under the end transverse seats, which are made a trifle longer than the other seats. The part of the floor surrounded by the semi-circular seat at each end of the car consists of a $\frac{1}{4}$ -inch steel plate extending over the truck bolster; this plate is supported on the body bolster, which is deeply depressed at the center for the purpose. Thus by placing the floor at the car ends directly over the truck and between the side frames with the semi-circular seats over the side frames and side bearing rub plates, there is no sacrifice of seating space and, at the same time, the operation of the truck is unhampered. From a technical standpoint this part of the car design and the corresponding changes in the truck are the most interesting features of the whole plan. As it was necessary to raise the semi-circular seats 6 inches above the other seats to obtain proper clearance for the trucks, the floor at the end of the car is inclined to give the proper distance between it and the seat cushions. With the exception of the semi-circular seats and the folding single seats at the doors, the seats are all of the transverse type. The transverse seats next to the semi-circular have stationary backs, while the others have backs of the push-over type. The central section is arranged similar to air-operated double sliding doors. The side windows have stationary upper sashes and the lower sashes are arranged to raise their full height; all of the side window sashes are removable, thereby adapting the car to summer as well as winter service. The bulkhead sashes and the sash in the cab doors drop into pockets. The tubular railings and uprights and the seat-back grab-handles are treated with white enamel, giving them a glazed finish like white porcelain. Eight natural draft



RIVETED IRON PIPE WITH SLIP JOINT AND CONNECTING BAND.

ventilators, with an exhausting capacity in excess of the requirements of the New York Board of Health regulations, change the air in the car when the windows are closed. Heavy wire screen guards protect the window openings from chance contact with projecting parts of vehicles, and the steel sheathing of the sides is capable of warding off heavy blows from wagon hubs. The whole plan of the car, in-

ches, of 14-gauge or lighter iron. There are several methods of jointing the pipe. A simple and safe connection shown in the illustration is made by applying several wrappings of burlap or canvas well soaked in mineral rubber asphalt, with a sheet metal band for protection. The band is drawn together by bolts. The pipe itself is either galvanized or coated with mineral rubber asphalt. Joints are also made simply by driving a section, slightly tapered, into another. A coating of mineral rubber is usually applied to the small end before driving. Lugs may also be placed on the pipes and these wired together—a common method of joining pipes used for conveying concrete. These pipes should be useful about water and sewage purification plants where water is carried from one tank or bed to another, about construction ditches, where water must be carried away, and in fact for any purpose where pressure is not too high.



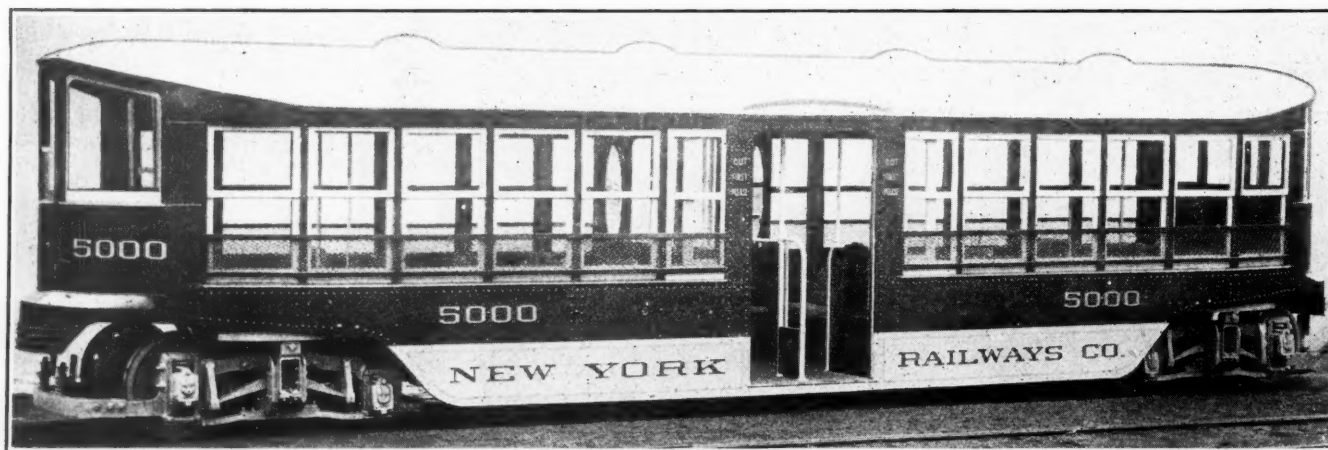
COAL CHUTE DESIGNED TO PREVENT ACCIDENTS, side and out, disregards traditional methods and appearance.

Machine-Made Riveted Iron Pipe

Robertson Brothers Mfg. Co., 1036 West 37th street, Chicago, Ill., manufacture machine-made riveted iron pipe suitable for conveying water for any purpose where the pressure is low. The pipe is made in 10-foot lengths, without cross seam. The rivets are set on 1-inch centers or closer when the pressure requires it. The pipes are made in diameters of from 3 to 16

Safe Coal Chute

The Majestic Furnace & Foundry Co., Huntington, Ind., have placed on the market a coal chute designed to prevent the many sidewalk accidents that occur at open coal holes. In some cities there are ordinances prohibiting owners from constructing and maintaining coal holes, or requiring the filing of bonds to protect the city in case of accidents. The Majestic chute is set in the side of the house. It is provided with a self-closing gravity latch, and when the door closes it locks itself and can only be opened on the inside, making it burglar-proof. The slotted hinges lock the door open when coal is being thrown in, the door protecting the building. The body of the chute is made of heavy steel, and is provided with a deep groove on the inner edge to stiffen the steel and to hold it firmly in the mason work. The hopper is of twelve gauge boiler plate and is so designed that when not in use it lies in the bottom of the chute body, allowing a full ray of light to shine in.



STEPLESS STREET CAR NOW OPERATED EXPERIMENTALLY ON BROADWAY, NEW YORK.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago—Large orders are not as numerous as was expected. Quotations: 4-inch, \$27; 6 to 12-inch, \$25; 16-inch and up, \$24.50. Birmingham—A number of good inquiries are pending. A number of orders ranging from 50 to 1,000 tons have been booked. The smaller cast iron pipe makers are all busy. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, average, \$21. San Francisco—Although not much important business has been booked the outlook is very favorable. New York—Private buying continues in good volume and inquiries continue good. Eastern foundries have considerably more business booked than at the corresponding time for several years. Quotations: 6-inch, car loads, \$22 to \$23.

Lead.—Market is quiet. Quotations: New York, 4.20c.; St. Louis, 4.125c.

Gasoline Pump.—The Atlantic Diaphragm Pumping Engine, for which Harold L. Bond Company, Boston, Mass., are the selling agents, while devised primarily for pumping trenches for sewers and the like, on account of its convenience and economy, has been found by experience to be adapted to other purposes. It is used by the health department of a number of cities for removing sewerage from cesspools. In operation it makes an otherwise disagreeable job odorless and it gives no trouble from choking. The pump has a 3-inch suction and 3-inch discharge and has a capacity of 3,000 to 4,000 gallons per hour. A diaphragm suction and force pump outfit is also made with 2-inch suction and 1½-inch discharge, which is useful in elevating water, as into tanks and sprinkling carts. Another Atlantic outfit is a double-acting suction and force pump with 5-inch brass lined cylinder, 2-inch suction and 2-inch discharge. The engine is also designed so that a contractor can attach to it diaphragm pumps which he already owns.

New Construction Car.—The Orenstein-Arthur Koppel Co., of Pittsburgh, is making a specialty of a new square box dump car of 4-yard capacity for construction work. The underframe and draft beam are steel and the body, which is readily removed, is oak. The material is thrown 4½ feet from the rail. The side doors have automatic dumping devices which allow them to give a clear opening of 4 feet outward and upward, so as to obtain a free discharge of the load. Special attention has been given to the design of the arms operating the doors, which are short and heavy and developed to resist any tendency to become sprung if the doors are hit laterally while the car is tipped.

Gravel Roofs.—Under the caption "What We are Doing to Promote Good Roofs," the Barrett Manufacturing Co. have published an attractive pamphlet illustrating many large buildings that have Barrett specification roofs. The statement is made that it is generally recognized that a good slag or gravel roof is the most economical roof covering that can be made. Unsatisfactory roofs of this character have invariably been caused by the failure to follow a definite specification or by the use of poor and insufficient materials, or both.

Road Machine.—A. J. Shea, 1231 East Second street, Duluth, Minn., has invented a road drag claimed to have some original features. The machine covers the ground on wheels when being taken from one place to another. When in use the scraper rests on the ground, the wheels being raised by a lever. When the scraper is drawn forward it combs up the road from the sides to the center. When drawn the other way it smooths and rounds up the road. Mr. Shea has had fourteen years' experience in the building of roads, and he believes that his machine will do better work at less expense than under any other known system at the present time. The county commissioners have inspected the machine.

Hydroelectric Power.—The Tennessee Railway, Light & Power Company, of Nashville, has announced its plan to organize with \$18,750,000 capital stock to control the Nashville Railway, Light & Power Company, Chattanooga Railway & Light Company, Eastern Tennessee Power Company, Great Falls Power Company, and other water power interests. It has 20,000 electrical horsepower developed on Ocoee river at Parksville, and will at once install 15,000 horsepower additional and construct a second development for 16,000 horsepower. It has a third power site on Ocoee river, capable of producing 30,000 horsepower. Its Great Falls property is on Caney Fork river, where 80,000 horsepower is developed.

Raybestos.—The Nott Fire Engine Company, Minneapolis, Minn., have called attention to the possibility that some readers might have inferred from a recent item in the Municipal Journal that the Raybestos brake on the Nott auto steam fire engine recently shipped to Bridgeport was an unusual equipment for Nott machines, whereas as a matter of fact the company has used Raybestos in their brake linings ever since they started to build heavy equipment.

Pipe and Fittings.—The General Fire Extinguisher Company, Providence, R. I., publish a cloth-bound volume of 421 pages, containing a catalogue of their line of wrought, cast iron and brass pipe, fittings, valves, etc., for steam, water and gas. As indicating the large number and variety of articles which this company manufactures or deals in as jobbers it may be stated that the index of articles occupies ten closely printed pages. The Grinnell automatic sprinkler goods comprise, perhaps, the most important single line of goods which the company make.

Underground Heating Systems.—The American District Steam Company, North Tonawanda, N. Y., are engaged in the business of installing underground steam heating systems. At the present time they are putting in a system for the University of Minnesota, at Minneapolis. A short time ago the company closed contracts for underground heating systems for Anderson, Ind., and Fort Dodge, Ia.

Paving Brick.—The Mack Manufacturing Company, 2032 Land Title building, Philadelphia, Pa., manufacturers of paving brick, announces that E. H. Goodrich now represents the company in New York State, succeeding Charles W. Denniston.

Steel Forms for Walls.—The Blaw Steel Centering Company, Westinghouse building, Pittsburgh, Pa., have published Bulletin 53, dealing with concrete house construction by use of the Blaw system. While designed primarily for house walls, the forms described in this bulletin are suitable for light wall work of any type.

Bridges.—The attention of highway engineers and county commissioners is called to the advertisement in this issue of the fact that the city of Baltimore will dispose of five bridges which are in excellent condition. As engineers can usually arrange the span of their bridges it will be an excellent opportunity for those desiring and contemplating installing bridges to obtain an excellent structure at practically the cost of old material.

Removal Notice.—W. Van R. Whitall, Inc., sales agents for the Rapid Heated Mixer and Port Huron Engine & Thresher Co. road and street machinery, will remove on May 1 from 50 Church street, New York, to 103 Park avenue, corner 41st street.

Road Drag.—The Attica Bridge Company, Attica, Ind., has issued an attractive pamphlet calling attention to the meritorious points of their Abrico road drag. These points are: That the framework is riveted, not bolted; angles where there is a severe strain have knee braces, and the frame itself is trussed. The drag weighs 350 pounds, has two blades 30 inches long and 6 wide; the whole length of the drag is 8 feet.

Removal Notice.—James M. Porter, dealer in paving blocks and paving bricks, Pittsburgh, Pa., has moved his offices to rooms 1842 and 1843, Oliver building, where he will have enlarged facilities for handling his business. He invites his friends, contractors and others interested, to make use of his office at any time. He will be pleased to give any information he may have regarding contracts.

Power Company.—The City Water Power Company, Hartford, Conn., has been granted a permit by the Secretary of State to do business in Texas. The company was recently organized for the purpose of carrying out the contract that was entered into between the city of Austin and the Hydraulic Properties Company, of New York, for the construction of a dam across the Colorado River here and to install a hydroelectric plant. The new concern has a capital stock of \$200,000. H. B. Freeman, Jr., of Hartford, is president, and Charles F. Roberts, of New Haven, Conn., is secretary. Frank S. Taylor, engineer, is the Austin representative of the company.

Gasoline Engines.—The Fairbanks-Morse Company is about to add to its Beloit, Wis., plant an extension of the blacksmith shops 80 x 130 ft. Additions to the present foundry capacity are likewise contemplated.

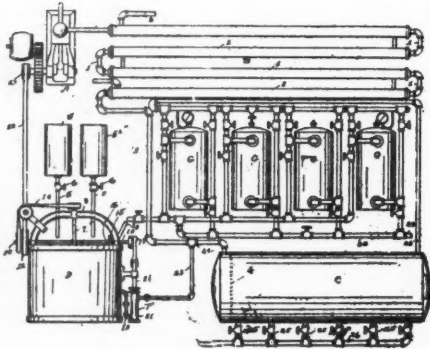
Hoists.—The International Hoist Company, Antigo, Wis., will begin work at once on the erection of two new buildings, a main building 40 x 80 ft. and a foundry 60 x 90 ft.

Auto Wheels.—The Sewall Cushion Wheel Company, Detroit, Mich., at its annual meeting decided to increase its capital stock from \$60,000 to \$300,000 to extend its business. The company is contemplating building a new factory in this city in the near future. The cushion wheel is recommended for use on auto fire apparatus, and has been successfully used for this purpose.

PATENT CLAIMS

1,021,761. WATER-TREATING PROCESS. John E. Caps, Wilmette, Ill. Serial No. 630,139.

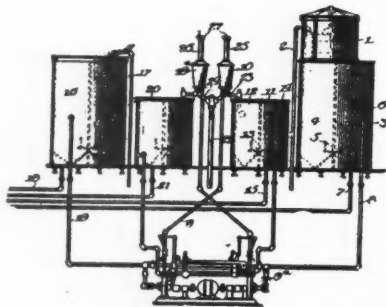
A water-treating process comprising the impregnation of a portion of the water treated with alkali for the purpose of neutralizing the carbonic acid gas contained therein and the consequent precipitation of substances soluble in a solution of such gas, the treatment of another portion of the water to be treated with heat to drive off the carbonic acid gas to secure a consequent similar precipita-



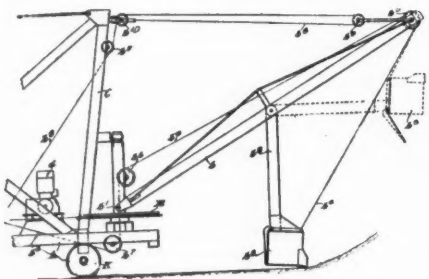
tion, and the mixture of the portions of water so respectively treated to neutralize the excess of alkali and acid present after such separate treatments.

1,022,560. SYSTEM FOR SOFTENING WATER. John T. Lemon, Columbus, Ohio. Serial No. 572,804.

A system for softening water comprising pumping mechanism, a chemical mixer, an elongated settling tank constructed to permit an even and uninterrupted flow of the water therethrough, means for delivering the mixed chemicals to the water preceding its admission to the settling tank, and adjustable means for intercepting and returning any quantity of the mixed chemicals to the mixer.



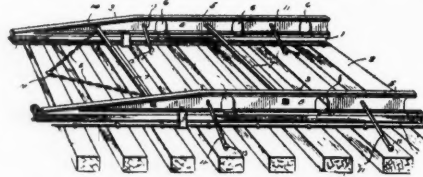
1,023,356. EXCAVATING-MACHINE. Charles E. Bathrick, Chicago, Ill., assignor to Frederick C. Austin, Chicago, Ill. Serial No. 602,360. Renewed Sept. 5, 1911. Serial No. 647,799.



In an excavator, a body, a turn-table with a dragline bucket equipment at one end of said body, and a turn-table with a dipper equipment at the other end of said body.

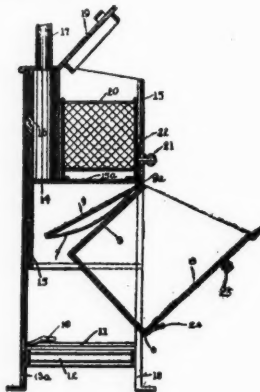
1,022,988. FIRE-HOSE CROSSING FOR RAILWAYS. Thomas D. Wailer, Memphis, Tenn. Serial No. 645,947.

In a device of the character described, in combination with a railway track, of castings provided with openings for the



passage of fire hose and adapted to be clamped to the track rails in alignment therewith and upon opposite rails of the track, brace rods interposed between and having bearings against the inner faces of the casting, brace chains having their ends secured at points adjacent to the ends of the brace bars, the central portion of the chain being passed through rings permanently secured between the tracks, and brace rods or arms connected with the outer faces of the castings and adapted to have their free outer ends driven downward to effect a bracing for the outer faces of the casting, substantially as shown and described and for the purpose specified.

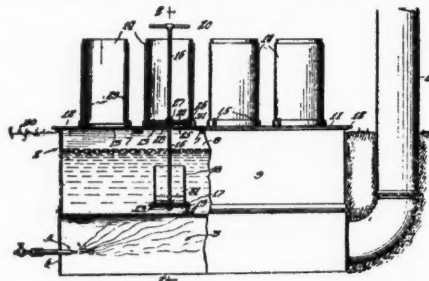
1,021,872. GARBAGE AND WASTE-PAPER RECEPTACLE. William M. Kingsbury, Cleveland, Ohio. Serial No. 629,898.



A receptacle comprising a casing having a closed upper part and a ventilating flue leading from the top thereof the lower part of the casing being open at the sides and bottom, and a removable garbage can in said casing, the top of said can projecting upwardly above the open part of the casing and into the closed part thereof, whereby odors will be confined in the upper part of the casing and conducted to the flue, and the lodgment of matter in the lower part of the casing will be prevented.

1,023,336. APPARATUS FOR PRODUCING CONCRETE PIPE WITH WATER-PROOF LINING THEREIN. George E. Salisbury, Arcadia, Cal. Serial No. 625,606.

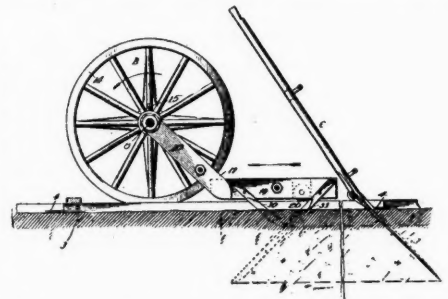
The combination of a tank, a cover plate for said tank having openings therein, means at said openings for retaining in position sections of concrete pipe, means for heating material in the tank, and a device for lining the interior of said sections of concrete pipe with said material, said device consisting of a rod,



a brush at the lower end of said rod, a container on the rod for supplying the material to said brush, and a second brush on said rod disposed above the first mentioned brush, substantially as described.

1,023,571. TRENCH-DIGGING MACHINE. John Lapin, New York, N. Y. Serial No. 602,143.

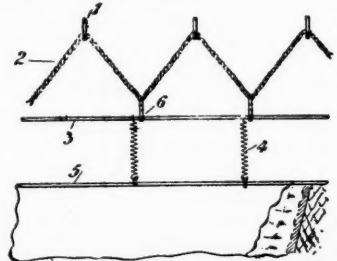
In a trench-digging machine, an axle, traction wheels mounted on said axle, means by which the distance between said wheels is varied, a soil-cutting mechanism loosely mounted on said axle between said wheels, said mechanism comprising a pair of downwardly and rearwardly-inclined arms and horizontal members rigidly connected with and offset from said arms, roller bearings journaled in each of said horizontal members adapted to support the same, adjustable means holding said arms and horizontal mem-



bers in their spaced apart position, a relatively short rearwardly-inclined soil-cutting knife carried by each of said horizontal members, and a relatively long forwardly-inclined trench cutting knife carried by each of said horizontal members.

1,020,146. LIFE-NET HOLDER. John W. Kyle, San Diego, Cal. Serial No. 621,697.

A life net holder comprising a rod securely attached to the one edge of a life net, a plurality of coiled springs attached at one of their ends to said rod, another rod attached to the other ends of said springs, a plurality of hooks securely fastened to the wall of a building, a cable adapted to be loosely supported by said hooks, a plurality of snaffle hooks connecting said cable with said last mentioned rod adapted to slide along said cable and rod to provide adjustment of said net to said wall or building, all substantially as set forth.



1,023,536. CABLEWAY ARRANGEMENT FOR DUMPING-MOUNDS OR THE LIKE. Wilhelm Weihe, Allenstein, Germany. Serial No. 579,343.

Mechanism for forming a spoil heap, mound or bank, comprising in combina-



tion, cables extending across the point on which the mound is to be formed, movable structure on the side of said mound adjacent the summit thereof for supporting the cables, a set of rails for said structure, means securing said structure to said rails, and a downwardly extending bracket for said structure, substantially as described.

1,023,506. FIRE-EXTINGUISHING APPARATUS. George J. Coutu, Lowell Mass. Serial No. 647,218.

In apparatus of the class described, a support comprising a head formed with a more and a groove extending longitudinally of the wall of the bore, and a slot opening into the groove, a water-supply pipe slidably fitted through the bore, a rack upon the pipe slidably in the groove, a shaft journaled upon the head, a pinion carried by the shaft and projecting through the slot and meshing with the rack, and means for rotating the shaft.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Massachusetts	Boston	Apr. 29, noon	Constrn. artificial stone sidewalks	L. K. Rourke, Comm. Pub. Wks.
New York	Elmira	Apr. 29, 11 a.m.	Constrn. 12,270 yds. brick, asphalt or wood pav't.	O. H. Gardner, City Clk.
Ohio	Wyoming	Apr. 29, noon	Constrn. concrete curb and gutter	W. A. Clark, Vil. Clk.
Ohio	Lakewood	Apr. 29, noon	Pavg. 2 streets	J. W. Chrisford, Dir. Pub. Serv.
New Jersey	Atlantic City	Apr. 29, 8 p.m.	Constrn. 15,000 yds. bitulithic, asphalt or bit. macadam pav't, curbing, drainage, etc.	Gustav Kessler, Chm. Street Comm.
Wisconsin	Appleton	Apr. 30, 9 a.m.	Pavg. several streets	E. L. Williams, City Clk.
Illinois	Streator	Apr. 30	Constrn. pav't.	W. W. Bean, Chm. Bd. Local Imp.
Illinois	Ottawa	Apr. 30	Pavg. with brick on concrete; cost, \$800,000.	J. C. Moore, County Aud.
Illinois	Rochelle	Apr. 30 (about)	Pavg. with brick on concrete base; cost, \$85,000.	W. B. M. Henry, Mayor; Aetna Eng. Bureau, Chicago.
North Carolina	Roxboro	Apr. 30, 4 p.m.	Constrn. 11,000 yds. bit. macadam	M. C. Winstead, Mayor.
Ohio	Urbana	Apr. 30, noon	Pavg. 1 mile water-bound macadam	County Commissioners.
Alabama	Camden	Apr. 30, 1 p.m.	Constrn. 5 miles gravel road	County Commissioners.
Iowa	New Hampton	Apr. 30, 7.30 p.m.	Constrn. 10,000 sq. yds. concrete pav't.	F. B. Strike, City Clk.
New York	Brooklyn	May 1, 11 a.m.	Imp. pavg. with asph., gran. & constrn sidewalks several sts.	A. E. Steers, Boro. Pres.
Ohio	Pleasant Ridge	May 1	Constrn. sidewalks and macadamizing	W. T. Mochershead, Clk.
New Jersey	Arlington	May 1, noon	Constrn. roads, drains, water supply, etc. for cemetery; cost, \$200,000.	Otto Sonne, Engr., New York.
Ohio	Logan	May 1, noon	Constrn. 1.59 miles concrete road	County Commissioners.
Virginia	Hanover	May 1, noon	Constrn. 1 1/4 miles gravel road	City Clerk; P. St. J. Wilson, State Highway Comr., Richmond, Va.
Wyoming	Ft. D. A. Russell	May 1, 10 a.m.	Repair. roads	Major A. W. Kimball.
Indiana	South Bend	May 1	Constrn. 3 miles crushed granite paving	J. W. Harbou, County Aud.
Arkansas	Ft. Smith	May 1, noon	Pavg. Garrison avenue	City Engr.
Florida	St. Augustine	May 1, 7.30 p.m.	Pavg. with vitrified brick	J. M. G. Carrera, City Clk.
Virginia	East Radford	May 1, noon	Constrn. 25,000 sq. ft. paving	E. F. Lawrence, Chm. Comm.
New York	New York	May 1, 10.30 a.m.	Pavg. with asph., asph. block & bit. pav't number of streets.	C. C. Miller, Boro. Pres.
Ohio	Cedar Point	May 1	Laying out a road	Cedar Point Resort Co.
South Dakota	Mellette	May 1	Constrn. 8 miles of road	F. G. Haven, County Clk.
Indiana	Rochester	May 1	Constrn. 56,000 sq. yds. brick pav't.	W. H. Ward, City Engr.
Indiana	Huntington	May 1	Constrn. 14,246 yds. asph. or bituminous concrete pav't.	H. I. Young, City Clk.
Ohio	Struthers	May 2, noon	Constrn. brick paving	Ira Isenbraun, Vil. Clk.
Indiana	Indianapolis	May 2, 10 a.m.	Furn. 205 carloads crushed stone	W. T. Patten, County Aud.
Illinois	Lewistown	May 2 (about)	Constrn. 16,400 yds. brick paving	Board Local Imp.
Ohio	Cleveland	May 2, noon	Imp. and pavg. with brick 39 streets; also pavg. with tar macadam or creosoted wood block 1 street	W. J. Springborn, Dir. Pub. Serv.
Ohio	Wilmington	May 2, noon	Constrn. 3.93 miles macadam	County Commissioners.
Ohio	Troy	May 2, 2 p.m.	Constrn. 1.86 miles macadam	County Commissioners.
Missouri	St. Louis	May 3, noon	Imp. and pavg. 2 streets	W. T. Findly, Sec'y Bd. Pub. Wks.
Ohio	Lancaster	May 4, 10 a.m.	Constrn. 4.28 miles water-bound macadam	County Commissioners.
North Dakota	Hankinson	May 4, 2 p.m.	Constrn. steel culverts	Board of Supervisors.
Iowa	Albia	May 6, noon	Constrn. cement sidewalks during year	C. C. Atchison, City Clk.
Oregon	Junction City	May 6	Constrn. concrete asphalt or bitulithic pav't.	City Clerk.
Indiana	Kentland	May 6, 2 p.m.	Constrn. 2 macadam roads	E. R. Brigham, County Aud.
Indiana	Rushville	May 6, 2 p.m.	Constrn. macadam roads	J. M. Stone, County Aud.
Ohio	Chillicothe	May 6, noon	Constrn. 1.31 miles bituminated concrete	County Commissioners.
New Jersey	Irvington	May 6, 8 p.m.	Constrn. 10-in. Telford pav't with asph. binders, 3-ft. brick gutters, curbing, etc.	M. Stockman, Town Clk.
Indiana	Folwell	May 6, 1 p.m.	Constrn. number of roads	L. Shipman, County Aud.
North Carolina	Raleigh	May 6	Constrn. 1 mile macadam road with binder	W. L. Wiggs, Gen'l Supt.
Indiana	Winamac	May 6	Constrn. 8,400 yds. street paving	C. E. Paul, City Engr.
Florida	Ocala	May 7	Bldg. road	S. T. Sistrunk, Clk.
Virginia	Lebanon	May 7	Gradv. and macadamizing a number of roads	County Supervisors.
Ohio	Akron	May 7, 1 p.m.	Constrn. 2.38 miles bituminated concrete	County Commissioners.
Indiana	Kokomo	May 7, 10 a.m.	Constrn. 2 gravel roads	A. B. Easterling, County Aud.
Indiana	Logansport	May 7, 10 a.m.	Constrn. roads	J. E. Wallace, County Aud.
Indiana	Brazil	May 7	Imp. highway, 15,800 ft. long	E. A. Staggs, County Aud.
Indiana	Vincennes	May 7, 2 p.m.	Constrn. 22,000 ft. gravel roads (3 contracts)	J. T. Scott, County Aud.
Florida	Palatka	May 7, 8 p.m.	Constrn. 52,000 yds. gravel and shell road	S. C. Stallings, City Engr.
Mississippi	Aberdeen	May 7, 2 p.m.	Constrn. 26 miles rock and gravel roads	Good Roads Commission.
Indiana	Decatur	May 7	Constrn. 2 roads	County Auditor.
Indiana	Marion	May 7, 2 p.m.	Constrn. gravel and stone road	E. H. Kimball, Aud.
Indiana	Madison	May 7, 1 p.m.	Macad. and pavg. road; cost, \$6,000.	A. M. Taft, County Aud.
Indiana	Crawfordsville	May 7, 10 a.m.	Imp. gravel roads	B. B. Engle, County Aud.
Pennsylvania	Reading	May 8, 2 p.m.	Maintaining 132,000 yds. asphalt for 5 years	E. B. Ulrich, City Engr.
Utah	Richmond City	May 8, 8 p.m.	Constrn. concrete sidewalks, curbs and gutters	N. K. Nelson, Chm. Comm.
New Jersey	Freehold	May 8, 11 a.m.	Constrn. gravel road on Ocean boulevard	J. M. Corlies, Dir.
South Dakota	Mitchell	May 9	Pavg. Main st. and intersect. blocks with conc.; cost, \$45,000.	City Council.
Ohio	Toledo	May 10	Constrn. brick, asphalt, creosoted block, asphalt block or asphalt concrete; cost, \$800,000.	J. R. Cowell, Dir. Pub. Serv.
New Jersey	Elizabeth	May 11, 11 a.m.	Constrn. macadam and bit. pav'ts.	J. L. Bauer, County Engr.
New Jersey	Elizabeth	May 11, 11 a.m.	Pavg. with trap rock, block pav't, bitulithic amasite, Warrenite or other pav't number of streets	J. L. Bauer, County Engr.
Oregon	Eugene	May 13	Pavg. Seventh street	City Clerk.
Michigan	Manistee	May 13, 2 p.m.	Constrn. macadam roads	Road Commissioners.
Ohio	Columbus	May 14, noon	Constrn. crusher bldg.	W. E. Hazwell, Sec'y Bd. Admin.
Ohio	Columbus	May 15, noon	Constrn. culverts and repairing aqueduct	A. I. Miller, Ch. Engr. Pub. Wks.
Tennessee	Dickson	May 15, noon	Macad. 8 miles of road	Dickson Turnpike Co.
Arkansas	Pine Bluff	May 15, 2 p.m.	Constrn. 25,500 bituminous wearing surface on gravel	C. M. Philpot, Chm. Imp. Dist.
Georgia	Bainbridge	May 15, 7.30 p.m.	Constrn. 22,000 yds. paving	J. W. Callahan, Mayor; H. S. Jauden, Engr., Savannah.
Michigan	Holland	May 15	Constrn. 1 1/2 miles bit. paving; cost, \$45,000.	H. A. Naberhuis, City Engr.
Ohio	Madison	May 15 (about)	Constrn. 2 miles macad. road	G. C. Ward, Engr., Painsville.
Minnesota	Breckinridge	May 20, 10 a.m.	Constrn. 1 1/2 miles of road	P. E. Truax, County Aud.
Texas	Paris	May 21	Constrn. 40 or more miles stone roads & building bridges	W. F. Gill, Sec'y Road Commr.
Ohio	Canton	June 1	Pavg. Broadway with brick block	R. F. Harbert, Dir. Pub. Serv.
Oregon	Fossil	July 3, 1 p.m.	Constrn. roads and bridges	H. F. C. Heidtmann, County Surv.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE				
Ohio.....	Lakewood.....	Apr. 29, noon.....	Constrn. sewer in Detroit avenue.....	J. W. Chrisford, Dir. Pub. Serv.
New York....	New Hartford....	Apr. 29, 10 a.m.....	Constrn. 41,271 ft. vit. & iron pipe & disposal plant.....	C. L. Marshall, Chm. Comm.
Indiana.....	Julietta.....	Apr. 29.....	Constrn. disposal plant for asylum.....	W. T. Patten, County Aud.
Ohio.....	Springfield.....	Apr. 29, noon.....	Constrn. storm water sewers.....	Dir. Public Service.
Massachusetts.	Boston.....	Apr. 30, noon.....	Constrn. pipe sewers and drains.....	L. K. Rourke, Comm. Pub. Wks.
New Jersey...	South Amboy....	Apr. 30, 8.30 p.m.....	Constrn. sanitary sewer system.....	R. M. Mack, City Clk.
Virginia.....	Roanoke.....	Apr. 30, noon.....	Constrn. sewer.....	W. L. Craft, City Clk.
New York....	Newark.....	Apr. 30.....	Constrn. 100,000 ft. 6 to 18-in. clay pipe sewers & disp. plant.	J. E. Wiser, Clk.
Illinois.....	Rochelle.....	Apr. 30.....	Constrn. sewer system.....	W. B. McHenry, Mayor.
Canada.....	Edmonton, Alta..	Apr. 30.....	Constrn. reinforced concrete sewer in tunnel.....	City Commissioners.
New Jersey...	Elizabeth.....	May 1, 8.30 p.m.....	Constrn. sewers 2 streets.....	W. P. Neafsey, Street Comm.
California....	Covina.....	May 1.....	Constrn. sewer system; cost, \$45,000.....	Town Clerk and F. G. Dessery, Eng., Los Angeles, Cal.
Indiana.....	Rochester.....	May 1.....	Constrn. 2,400 ft. sewers.....	W. H. Ward, City Engr.
Ohio.....	Canton.....	May 1, 10 a.m.....	Constrn. sewers.....	J. H. McConnell, County Aud.
Illinois.....	Altamont.....	May 1.....	Constrn. sewer system.....	City Council.
California....	Venice.....	May 1.....	Constrn. sewers; cost, \$15,000.....	G. F. Lewin, City Engr.
Ohio.....	Bellefontaine....	May 1.....	Constrn. sludge bed, furn. pump.....	F. D. Outland, City Aud.
Ohio.....	Elyria.....	May 1.....	Constrn. 1,700 ft. 8-in. clay pipe sewer.....	C. M. Theobald, City Engr.
New York....	New York.....	May 1, 10.30 a.m.....	Constrn. sewers.....	C. C. Miller, Pres.
Connecticut..	Bridgeport.....	May 2.....	Constrn. sewer, tile or cement.....	A. H. Terry, City Engr.
New Jersey...	Westfield.....	May 6, 8 p.m.....	Constrn. 5 concrete culverts with c. i. tops, 255 lin. ft.....	Chas. Clarks, Town Clk.
New Jersey...	Longport.....	May 9.....	Constrn. sewer system; cost, \$10,000.....	Boro. Council.
Iowa.....	Reinbeck.....	May 13, 7.30 p.m.....	Constrn. 6 miles 8 to 15-in. sanitary sewers & disposal plant.	R. B. Ferguson, Town Clk.; Iowa Engr. Co., Engrs., Clinton, Ia.
New Jersey...	Newark.....	May 14, 2 p.m.....	Constrn. 7,270 ft. sewer.....	Passaic Valley Sewerage Comm.
Alabama.....	Mobile.....	May 14, noon.....	Constrn. vit. pipe sanitary sewers, 26,000 ft. 8 to 24-in. pipe.	City Commissioners.
Georgia.....	Sylvestor.....	May 15, 5 p.m.....	Constrn. 3 miles 8 to 12-in. sewers and septic tank.....	R. B. Pollard, City Clk.; J. B. Mc- Crary Co., Atlanta, Ga.
Ohio.....	Canton.....	June 15.....	Extend. storm sewer, Liberty street.....	P. H. Weber, City Engr.
WATER SUPPLY				
New York....	White Plains....	Apr. 29.....	Constrn. filtration system, 1,000,000-gal. capacity.....	Water Commissioners.
Ohio.....	Lakewood.....	Apr. 29, noon.....	Constrn. steel water tower.....	Dir. Public Service.
Minnesota....	Jordan.....	Apr. 29.....	Constrn. water works; cost, \$7,000.....	A. M. Schaefer, City Clk.
New Jersey...	Union.....	Apr. 29, 8.30 p.m.....	Constrn. water pipes, hydrants, valves, etc.....	J. F. Woods, Township Clk.
Massachusetts.	Boston.....	Apr. 30, noon.....	Relaying 2,800 ft. 10 and 12-in. water pipe.....	L. K. Rourke, Comm. Pub. Wks.
Ohio.....	Columbus.....	Apr. 30, noon.....	Furn. c. i. pipe and specials.....	S. A. Kinnear, Dir. Pub. Serv.
Canada.....	N. Battleford, Sk.	Apr. 30, 8 p.m.....	Constrn. water mains.....	W. S. Dixon, Sec'y-Treas.
New Jersey...	South Amboy....	Apr. 30, 8.30 p.m.....	Constrn. steel water tank.....	R. M. Mack, City Clk.
Pennsylvania.	Latrobe.....	Apr. 30.....	Constrn. mechanical filtration plant.....	Latrobe Water Co.
Canada.....	High River, Alta.	Apr. 30.....	Constrn. water works and sewer system.....	G. E. Mack, Sec'y.
Indiana.....	Logansport.....	Apr. 30, 10 a.m.....	Constrn. head gate, concrete piers, wood gates & bridge floor	F. H. Thompson, Chm. Bd. Pub. Wks.
Missouri.....	Pleasant Hill....	May 1 (about).....	Constrn. 65,000-gal. tank, two 200 G. P. M. pumps, 20-h.p. motor, 20-h.p. oil engine, 35-ft. well, concrete.....	S. M. Gordon, Mayor.
Illinois.....	Compton.....	May 1, 2 p.m.....	Constrn. steel water tower and tank.....	J. S. Archer, Vil. Clk.
Nebraska....	David.....	May 1.....	Lay, 8,000 ft. 4-in. c. i. pipe, etc.....	T. B. Myers, City Clk.
Iowa.....	Burlington.....	May 1.....	Constrn. concrete settling tank.....	Citizens Water Co.
Illinois.....	Altamont.....	May 1.....	Constrn. water works and furn. hydrants, valves, c. i. pipe, pumps, tower and tank.....	City Council.
Kansas.....	Burr Oak.....	May 1 (about).....	Constrn. water system; estimated cost, \$25,000.....	J. E. Hawley, Mayor; Goodwin & Hayes, Consult. Engrs., Kansas City, Mo.
New York....	Jamestown.....	May 2, noon.....	Furn. 16 and 24-in. c. i. pipe and specials; also laying same. Constrn. 5,000,000-gal. covered reservoir.....	Water Commrs.; Chester & Fleming, Engrs., Pittsburgh.
Georgia.....	Baxley.....	May 3.....	Constrn. 2,000 ft. 6 and 8-in. c. i. pipe.....	W. H. Watson, Mayor; W. W. Lyon, Engr., Jacksonville.
Missouri.....	St. Louis.....	May 3, noon.....	Furn. 7,718 tons c. i. water pipe.....	Water Commissioners.
Michigan.....	Saginaw.....	May 3, 7.30 p.m.....	Install. feed water heating, purifying and pumping plant.....	W. F. Jahnke, Clk. Water Comm.
Oregon.....	Monmouth.....	May 4, 3 p.m.....	Constrn. water system; estimated cost, \$1,500 to \$2,000.....	I. E. Stitt, City Clk.; L. C. Kelsey, Consult. Engr., Box 305, Portland, Ore.
South Dakota.	Mobridge.....	May 6, noon.....	Constrn. steel tower and tank.....	M. T. Woods, City Aud.
Michigan.....	Kalamazoo.....	May 6, noon.....	Constrn. two 36-ft. tanks, 70 ft. high.....	C. L. Miller, City Clk.
South Dakota.	Mitchell.....	May 6.....	Constrn. artesian well and appurt.....	N. H. Jensen, City Aud.
New York....	New York.....	May 7.....	Making borings at reservoir site.....	Board Water Supply.
South Dakota.	Mitchell.....	May 9.....	Constrn. 7,500 ft. 4 to 10-in. water mains, etc.....	N. H. Jensen, City Aud.
Arkansas.....	Benton.....	May 10.....	Constrn. water and sewer systems; cost, \$68,000.....	I. R. Packard.
Iowa.....	Indianola.....	May 10, 7 p.m.....	Constrn. reinforced concrete reservoir; capacity, approx. 750,000 gal.....	A. H. Gilliland, Engr.
Iowa.....	Reinbeck.....	May 13, 7.30 p.m.....	Constrn. extensions.....	R. B. Ferguson, Town Clk.
New York....	Fayetteville....	May 15, 8 p.m.....	Constrn. 9,000,000-gal. reservoir and accessories.....	W. M. Jones, Pres.
Georgia.....	Sylvestor.....	May 15.....	Constrn. 4,650 ft. 6-in. c. i. pipe, etc.; furn. air compressor...	R. B. Pollard, City Clk.
Canada.....	Halifax, N. S....	May 15.....	Constrn. water works; cost, \$100,000.....	F. W. W. Doane, City Engr.
New York....	Olean.....	May 16.....	Furn. 2,000 ft. 8-in. c. i. pipe.....	A. E. Homer, Sec'y Water Comm.
Pennsylvania.	Erie.....	May 17.....	Constrn. filter plant, pumping machinery, etc.....	Commissioners of Water Works.
Florida.....	Titusville.....	May 20.....	Constrn. water works.....	Geo. M. Robbins, Chm. Bond & Trus.
Illinois.....	Peoria Heights..	June 1.....	Constrn. municipal well water system; cost, \$60,000.....	Village Clerk.
Colorado....	Aguilar.....	June 1 (about).....	Constrn. water works; cost, \$70,000.....	City Clerk.
LIGHTING AND POWER				
California....	Roseville.....	Apr. 29.....	Constrn. new light. plant or substation and supplying lamps..	U. S. Marshall, City Engr.
Minnesota....	Foley.....	May 1.....	Constrn. lighting plant; cost, \$10,000.....	H. E. Becker.
Georgia.....	Manchester.....	May 1, noon.....	Constrn. lighting plant.....	Mayor.
Indiana.....	Ft. Wayne.....	May 2, 2.30 p.m.....	Install. two 500-h.p. boilers and stokers.....	F. T. Benoy, Chm. Bd. Pub. Wks.
Georgia.....	Baxley.....	May 3.....	Constrn. lighting plant.....	W. H. Watson, Mayor; W. W. Lyon, Engr., Jacksonville.
Ohio.....	Brathenahl.....	May 3, noon.....	Lighting streets with 160 vapor lights.....	C. A. Neff, Vil. Clk.
Ohio.....	Salem.....	May 6, noon.....	Furn. electric current for street lighting for three years...	D. H. Rummel, Dir. Pub. Serv.
Kansas.....	Topeka.....	May 7, 2 p.m.....	Furn. 50-h.p. engine and generator.....	H. C. Bowman, Chm. State Bd. Con.
New Jersey...	Freehold.....	May 8, 11 a.m.....	Furn. lighting fixtures for bridges.....	J. M. Corlies, Dir.
Pennsylvania.	Newcastle.....	May 13, noon.....	Light. streets with arc and incandescent lights.....	F. M. Hartman, City Clk.
Canada.....	Regina, Sask....	May 15.....	Furn. luminous arc st. light. equip., light. poles, 100-kw.gen.	City Commissioners.
FIRE EQUIPMENT				
Montana.....	Shelby.....	May 1.....	Furn. 4,000 ft. of hose.....	City Clerk.
Canada.....	Vancouver, B. C.	May 1.....	Furn. 2 auto pump, engs., 2 serv. trucks, 1 chemical, 3 hose wagons, auto aerial ladder truck, chief's car; also poles and nozzles, \$8,000.....	Fire Chief Carlisle.
Ohio.....	Youngstown....	May 3.....	Bldg. fire station.....	N. McVay, City Clk.
Georgia.....	Atlanta.....	May 4.....	Constrn. fire alarm system.....	Chief of Department.
Indiana.....	Newcastle.....	May 6.....	Furn. 2,000 ft. fire hose.....	L. M. Johnson, Clk.
Louisiana....	Shreveport.....	May 14, 10 a.m.....	Furn. 1 auto comb. chemical hose wagon & appurt., 2 auto comb. pump engine hose wagons, 1 tractor, 1 chief's car & equipment, 2,000 ft. 2 1/2-in. rubber-lined double jacket standard fire hose, standard screw couplings attached, 9 non-interfering fire alarm boxes, 1 auxiliary fire alarm box, 1 electric bell striker for 1,400-lb. bell, one 15-in. gong and indicator.....	L. H. Baker, Sec'y-Treas.
Ohio.....	Canton.....	May 20 (about)....	Furn. equipment for fire department.....	Thos. Dunwoodie, Dir. Pub. Safety.
Michigan.....	St. Joseph.....	June 1.....	Furn. 500 ft. fire hose.....	H. G. Hughson, Chief Dept.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES				
Maryland	Baltimore	Any time	Purchasing 5 bridges from city	H. K. McCay, City Engr.
Indiana	Ft. Wayne	Apr. 29	Constrn. reinforced concrete bridge	D. M. Foster, Pres. Park Bd.
Nebraska	Arlington	Apr. 30	Constrn. reinforced concrete arch bridge	O. T. Anderson, County Clk.
New Jersey	Freehold	May 1, 11 a.m.	Bldg. bridge over lake	J. M. Corlies, Dir.
Indiana	Richmond	May 1, 11 a.m.	Constrn. a number of bridges	County Commissioners.
Georgia	Cartersville	May 3, 2 p.m.	Constrn. steel and concrete bridges	G. A. Veach, Comm.
Michigan	Kalamazoo	May 5, noon	Constrn. reinforced concrete bridge	C. L. Miller, City Clk.
Iowa	Creston	May 6, 4 p.m.	Constrn. concrete bridge	T. S. Delay, County Surv.
Michigan	Kalamazoo	May 6, noon	Constrn. reinforced concrete bridge	C. L. Miller, City Clk.
Florida	Tampa	May 7	Constrn. Lafayette street bridge	Board Public Works.
Indiana	Vincennes	May 7, 2 p.m.	Constrn. 9 bridges	J. P. Scott, County Aud.
West Virginia	Marlington	May 7	Constrn. several bridges	C. J. McCarty, County Clk.
Indiana	Plymouth	May 8	Constrn. 8 small reinforced concrete bridges	D. F. McCoy, County Aud.
Rhode Island	Woonsocket	May 8, 4 p.m.	Constrn. concrete arch bridge	Comm. Sts. and Bridges.
Ohio	Cincinnati	May 10, noon	Constrn. concrete bridge	Stanley Struble, Comm.
Ohio	Youngstown	May 16, 11 a.m.	Constrn. abutments of bridge, cleaning and painting	L. M. Hogg, County Aud.
MISCELLANEOUS				
Massachusetts	Boston	Apr. 29, noon	Bldg. police station and court house	M. J. Fish, Supt. of Bldgs.
New York	Long Island City	Apr. 29	Furn. dump scows, appliances and labor for final disposition of garbage	M. E. Connolly, Boro. Pres.
Texas	Brownsville	Apr. 29, 10.30 a.m.	Bldg. court house and jail	County Auditor.
Pennsylvania	Lancaster	Apr. 30	Bldg. concrete retaining wall and coal pockets	J. H. Rathfon, City Compt.
Canada	Ottawa, Ont.	Apr. 30	Furn. wire rope, steam pipe, chain, fittings	R. C. Desrochers, Sec. Dpt. Pb. Wks.
Massachusetts	Boston	Apr. 30, noon	Furn. 2,000 bathing suits	J. E. Mullen, Supt. Supplies.
Texas	Galveston	May 1	Constrn. sanitary jail	J. M. Church, County Aud.
Delaware	Wilmington	May 1, 10 a.m.	Collect and removing garbage for term of 3 years	C. W. Malcom, Sec'y Bd. Health.
New York	Brooklyn	May 2, 3 p.m.	Install playground apparatus, bldg. shelters & other park wk.	C. B. Stover, Pres. Park Bd.
New Jersey	Jersey City	May 2, 3 p.m.	Constrn. retaining wall	Walter O'Mara, Clk. Freeholders.
Massachusetts	New Bedford	May 3, 4 p.m.	Repairing wharf	R. C. Sherman, Chm. Com. Wharves.
New York	Poughkeepsie	May 6, 3 p.m.	Bldg. hose-drying building	J. J. Graham, City Chamberlain.
Cuba	Santiago	May 6	Constrn. 6,400 meters of tramway	La Jefatura del Distrito de Oriente.
Florida	Clearwater	May 7, noon	Constrn. county court house and jail	C. W. Wiecking, Clk. of Bd.
New Jersey	Garwood	May 7	Furn. fire alarm system	Boro. Council.
California	San Francisco	May 8, 2.30 p.m.	Furn. & deliver 48 double end pay-as-you-enter California type motor cars & 4 extra trucks complete with axles, wheels and motors	Board Public Works.
Florida	Jacksonville	May 8, 10 a.m.	Furn. 7-ton tandem road roller	County Commissioners.
Minnesota	Lesueur Center	May 20, 10 a.m.	Bldg. fireproof jail and residence	J. H. Kaisersall, County Aud.

STREET IMPROVEMENTS

Phoenix, Ariz.—At meeting of Board of Supervisors contract was closed with Barber Asphalt Co. wherein county undertakes to pay its share of expense of paving West Jefferson st., from First to Second ave. At next meeting of Council specifications will be presented for its approval, calling for paving of this street from Fourth ave. to Fifth st.

Chico, Cal.—Board of Trustees has granted permit to Ransome-Crummey Co. to pave 10 blocks of Fifth st., from Wall st. to Southern Pacific depot. Paving will be similar to that on business streets of town.

Los Angeles, Cal.—At request of city authorities, County Highway Commission will build link in Wilmington-Redondo rd. across shoestring strip, just above old Wilmington city boundaries.

Los Angeles, Cal.—Arroyo Seco parkway, a six-mile link in great boulevard system from mountains to sea, proposed for Los Angeles, has been approved by Streets and Boulevards Committee of city.

Washington, D. C.—Resolution has been introduced asking that Commissioners seek to secure appropriation by Congress of \$20,000 to improve Pennsylvania ave. southeast from 13th st. to Pennsylvania ave. bridge.

Wilmington, Del.—Resolution has been adopted by Directors of Street and Sewer Department to widen Third st., beginning 219 ft. east of Church st. to port warden's line at Christiana River; this portion of Third st. to be made 175 ft. wide from building line to building line. It is now 49 ft. wide.

Jacksonville, Fla.—Resolution has been adopted by Good Roads Committee of Jacksonville Board of Trade that may result in cutting out south side municipality as western terminus of Atlantic Blvd., as paved road to Atlantic and Pablo Beach is known.

St. Augustine, Fla.—Work of paving Central ave. with brick, from King st. to Bridge, is being discussed.

E. St. Louis, Ill.—Ordinance has been passed providing for paving of large number of city streets.

Ottawa, Ill.—Resolution has been unanimously adopted by Board of Local Improvements recommending to City Council that ordinance be passed providing for pavement of Madison st., from side-cut to Fisher st.

Clinton, Ia.—City Council is receiving bids for paving of Fifth ave., between Second and Fifth sts.

Clinton, Ia.—Resolution has been adopted directing City Engineer to prepare necessary plans, specifications and paving of Third st., from Second ave. to Third ave., with concrete paving; also ordering City Engineer to prepare neces-

sary plans, specifications and papers for construction of cement pavement on Second ave., from Third st. to Fourth st.

Indianapolis, Ind.—Mayor Shank will take up with Board of Public Works question of improving with crushed stone Indiana ave., from White River to Crawfordsville rd. Mayor has been assured by City Controller Wallace that latter will recommend special appropriation of \$20,000 for Street Commissioners' Department, and Mayor believes this amount will do great deal toward placing principal unimproved streets of city in good condition.

Richmond, Ind.—Construction of cement sidewalks and curbs and gutters on South 16th and North Fourth sts., cement alley between Eighth and Ninth, from Main to Sailor and crosswalks in the city have been let. A. F. Hooton gets South 16th st. job, estimated cost being \$6,000; Foster Construction Co. was awarded North Fourth st. work at estimated cost of \$2,700; alley between was awarded Daniel G. Burkhardt at \$181. Contract for crosswalks was given Burkhardt.

Chanute, Kan.—People have voted bonds for \$25,000 to pay for park and few miles of good roadway.

Fort Scott, Kan.—Plans have been drawn for improvement of portion of Marmaton ave. by paving with vitrified brick and sand filler on 4-in. concrete base.

Winchester, Ky.—Council has decided to pave a number of streets.

Bangor, Me.—City will experiment with oil for sprinkling streets.

Takoma Park, Md.—Town Council has appropriated \$3,000 to be expended for improvement of streets and avenues.

Lawrence, Mass.—City Council is discussing street paving. City Engineer A. D. Marble will prepare new estimates of cost of block paving Lowell, Milton, Haverhill and other streets.

Lawrence, Mass.—City will borrow \$125,000 for block paving.

Flint, Mich.—Fifty miles of good roads will be built in Genesee County this year, according to agreement reached by County Road Commissioners and Supervisors. Commissioners ask for \$100,000, or one-fifth of bond issue voted for use in constructing roads proposed for this year.

Kalamazoo, Mich.—First work on roads in Kalamazoo County will shortly be begun. Board of Supervisors has already appropriated \$54,000 to carry on work and in addition to this amount sum of \$500 was voted for purpose of experimenting with oil for preservation of highways and \$3,000 for maintaining present good roads.

Owosso, Mich.—Supervisors have voted for submission of county road system. Question will be submitted to Shiawassee county electors at August primary.

Springfield, Mo.—Bids will be received by City Clerk at City Hall, until 9 a.m., May 7, for purchase of \$50,000 street improvement bonds. J. H. Langston, City Clerk.

Bayonne, N. J.—Council has ordered Avenue E paved with asphalt.

Irrington, N. J.—Petition from property owners on Sanford ave. requesting that thoroughfare be sprinkled with oil has been favorably received.

Irrington, N. J.—Ordinance for paving of Maple ave., from Springfield ave. to May st., with Telford, has been passed on final reading and ordinances for curbing and paving of Franklin st. and laying of storm sewer in Franklin st. have been given their first reading.

Irrington, N. J.—Several street improvement measures will come up for hearing before Irrington Town Council. Chief among them will be notice of intention to repave Springfield ave. with granite block, from city line to South Orange Township limits, at 43d st.

Jersey City, N. J.—Ordinance has been passed to establish grade of Old Road, between East Centre st. and point on said road, distant 200 ft. northerly from northerly curb line of East Centre st. W. P. Lee, City Clerk.

Kenilworth, N. J.—It has been decided to macadamize 20th st., from Boulevard to tracks of Rahway Valley Railroad, Washington ave., from 19th to 21st st., and 21st st., between Washington ave. and Boulevard.

Long Branch, N. J.—Purchase of Kelly-Springfield steam road roller has been authorized; cost, \$2,945.

Newark, N. J.—Mayor Haussling has approved resolutions providing for opening of new down town street at cost of \$1,235,000.

Perth Amboy, N. J.—Council has adopted recommendations of Street and Sewer Committee to pave Brighton ave., between Market and Gordon sts. with 2-in. asphalt block; and to pave First st., from Market st. to Raritan River, and Lewis st., from First st. to Madison ave. It is the intention of Board to pave Mechanic st., between Fayette and Commerce sts., with 2-in. asphalt blocks. Petitions have been received asking for various other street improvements.

Trenton, N. J.—Series of road bills, approved by Governor Wilson, will give New Jersey eventually 1,500 miles of State highways.

Trenton, N. J.—Ordinances have been passed to authorize paving of Hill's Alley, from Federal st. to Cass st., with monolithic concrete 6-in. thick, and paving of Walklett alley, from Bayard st. to Mott st., with Monolithic concrete 6-in. thick.

Albany, N. Y.—Following are lowest bids opened at office of State Commissioner of Highways, 53 Lancaster st., for improvement of public highways by State

aid: Road No. 978, East Berne-Glyckmanns Church, Albany County, 4.35 miles, John E. DeLee, Troy, \$41,215; McDonough Hamlet Road No. 1014, Chenango County, .08 mile, John H. Gordon, Albany, \$1,403; Ninevah-Afton, Road No. 5200, Broome and Chenango Counties, 5.61 miles, Guy B. Dickenson, \$120,500; Jamestown City, Road No. 5201, Chautauqua County, 1.48 miles, Thos. Mahoney Co., Jamestown, \$53,071; Otto-Cattaraugus, Road No. 695, Cattaraugus County, 1.21 miles, McNer Construction Co., Canton, Pa., \$9,994; Otto-East Otto, Part 2, Highway No. 697, Cattaraugus County, 2.27 miles, McNer Construction Co., Canton, Pa., \$19,671; Truxton-Chenango, Road No. 995, Cortland County, 4.86 miles, Rifton & Murphy, Rochester, \$47,535; Franklin-Treadwell, Road No. 983, Delaware County, 2.56 miles, John H. Gordon, Albany, \$20,324; Millerton-Indian Pond, Road No. 1007, Dutchess County, 2.72 miles, Lane Construction Co., Meriden, Conn., \$24,743; Niagara Falls-Buffalo, Part 5, Road No. 5193, Erie County, 2.84 miles, Niagara Construction Co., Elmira, \$63,674; Springville Village, Road No. 989, Erie County, 2.25 miles, Thos. Fitzgerald & Co., Fredonia, \$77,251; Cairo Hamlet, County Highway No. 954, Greene County, .46 mile, Catskill Supply Co., Catskill, \$5,198; Ilion Village, State Highway No. 5161, Herkimer County, 1.51 miles, Warren Bros. Co., Boston, Mass., \$74,445; Black River, State Highway No. 5175, Jefferson County, .41 mile, M. R. Clock & Co., Watertown, \$7,262; Chittenango Village-Seneca Turnpike, County Highway No. 955, Madison County, .43 mile, Conroy & Nixdorf, Oneida, \$6,692; Pugsley Hill, Road No. 493-A, Monroe County, .48 mile, Monroe Roads Co., Pittsford, \$9,625; Monroe-Orleans County Line, County Highway No. 588, Monroe and Orleans Counties, 2.08 miles, Haradine Bros., Spencerport, \$18,633; Unadilla Village, Road No. 5202, Otsego County, 1.93 miles, Hollington Co., Troy, \$39,427; Yorkville Village, Road No. 5091, Oneida County, 1.06 miles, Warren Bros., Boston, Mass., \$38,264; Pulaski-Williamstown, Road No. 972, Oswego County, 5.67 miles, Thos. Grady, Rochester, \$49,064; Brewster-Patterson, State Highway No. 5203, Putnam County, 9.80 miles, Harvey B. Sproul, Peekskill, \$150,299; Wynantskill-DeFreestville, Winter st. County Highway No. 765, Rensselaer County, 4.10 miles, Wm. A. Patterson, Albany, \$33,362; Coram-Patchogue, County Highway No. 1018, Suffolk County, 6.79 miles, Suffolk Construction Co., Huntington, \$73,335; Big Creek, Part 3, County Highway No. 1000, Steuben County, 6.95 miles, Peter F. Connolly Co., Boston, Mass., \$60,452; Bath-Avoca, State Highway No. 5204, Steuben County, 6.37 miles, Atlanta Construction Co., Atlanta, \$34,728; Stillwater-Schuylerville, Part 1, State Highway No. 5205, Saratoga County, 5.38 miles, Wm. C. Fox, Saratoga, \$60,488; Norwood-Norfolk, County Highway No. 967, St. Lawrence County, 2.30 miles, Spellman-Oliver Co., Chateaugay, \$29,961; Trumansburg Village, State Highway No. 5206, Tompkins County, 1.54 miles, Dollard & Heeran, Albany, \$38,838; Kingston-Ellenerville, Part 4, County Highway No. 352, Ulster County, 1.91 miles, DeGraff & Hogeboom, Kingston, \$19,960; Williamson Station-Poultneyville, County Highway No. 994, Wayne County, 3.46 miles, Greece Construction Co., Rochester, \$39,106.

Albany, N. Y.—Governor Dix has signed Assemblyman Milford's bill accepting that portion of Route 33 of system of improved highways from southerly bounds of village of Cicero to city of Syracuse, and all of Route 10 in Onondago County, from appropriation of \$750,000 for highway improvement.

Brooklyn, N. Y.—Bids have been opened for six contracts for highway work in Queens, successful bids amounting to \$43,208.50. Jobs will be completed in about 90 days. Following is list of lowest bidders and amount of their bids: For paving with asphalt blocks on concrete foundation, Eighth ave., from Graham to Pierce aves., Long Island City, Hastings Pavement Co., \$4,980. For regulating grading, curbing and laying sidewalks in 15th ave., from Jackson to Graham aves., and for paving with asphalt blocks, 15th ave., from Jackson ave. to Broadway, Long Island City, Hastings Pavement Co., \$11,663.40. For regulating grading, curbing, flagging and laying sidewalks, Wilson ave., from 12th ave. to 19th ave., and for laying sidewalks, from 10th ave. to 12th ave., Long Island City, Green Contracting Co., \$10,702.50. For regulating and grading Sunswick st., from Parpitar ave. to North Jane st., S. Wilson, \$9,875. For regulating, grading and flagging Herald ave., from Emerson st. to Brandon ave., Richmond Hill, Geo. Marshall, \$5,231. For regulating, grading, curbing and laying sidewalks in Anthon ave., from Silver st. to Catalpa

ave., Ridgewood, Louis J. Boelsen, \$957.

Cohoes, N. Y.—Resolution has been presented asking that Bemis alley, from Ontario st. south to Oriskany st., be paved and that curb-gutter be also laid on alley.

Newburgh, N. Y.—Petition has been received by Street Committee asking for paving of Montgomery st., from First st. to South.

Poughkeepsie, N. Y.—Board of Public Works has determined to pave South Cherry st., from Church st. to Forbus st., with vitrified brick.

Corning, N. Y.—Resolutions have been passed for paving a number of streets with brick.

Ilion, N. Y.—Village has voted to borrow \$100,000 for paving.

Kenmore, N. Y.—Opening of Kenmore ave., from Main st. to Military rd., is being discussed.

Lockport, N. Y.—Streets Committee of Common Council has approved of petition of residents of Washburn st. for paving improvements to extend from junction of street with Locust at Fair Grounds to junction of Washburn and Exchange sts. in East Lockport.

Mt. Vernon, N. Y.—Bids will be received until 8 p.m., May 7, for purchase of \$25,000 highway improvement bonds. E. W. Fiske, Mayor. Peter Collins, City Clerk.

Newburgh, N. Y.—Street Committee have decided to use a dust-laying oil in place of water on streets.

Niagara Falls, N. Y.—Board of Public Works is estimating cost of paving various streets of city.

Poughkeepsie, N. Y.—Board of Public Works has determined to pave Bayraux st., from Main to Mill sts., with vitrified brick, and Forbus, from Hooker ave. to Cherry st., with bituminous macadam. R. J. Shields, Clerk.

Rochester, N. Y.—Resolution providing for widening of whole or part of Tonawanda st. will be introduced at meeting of Common Council.

Rochester, N. Y.—Common Council will take action on ordinances for brick pavement in Hayward ave., Alexis st. asphalt pavement, improvement of Chamberlain st., from Hayward ave. to Melville st., estimated expense, \$13,000; Berwyn st., from Melville st. to Rosewood Terrace, estimated expense, \$4,300; Lampson st., from Hayward ave. to Garson ave., estimated expense, \$2,500; Stout st., from Garson ave. to Melville st., estimated expense, \$9,700; Denver st., from Garson ave. to Parkside st., estimated expense, \$17,000; Greeley st., from Garson ave. to Parkside st., estimated expense, \$17,000; Baldwin st., from Hayward ave. to Parsells ave., estimated expense, \$8,000.

Rochester, N. Y.—County Supervisors have obtained permission of State Highway Department to pave Riga-Bergen rd. 2½ miles with concrete and bituminous surface at cost of \$9,000 per mile.

Scotia, N. Y.—Paving of Ballston ave. has been thoroughly discussed, and State Engineer presented plans for the road.

Yonkers, N. Y.—Resolutions have been adopted directing City Engineer to prepare plans and specifications for regulating, grading and paving of Iroquois rd. and various other streets.

Cleveland, O.—Bids will be received at office of City Auditor Thomas Coughlin, until 12 noon, May 10, for purchase of \$450,000 street improvement coupon bonds.

Dayton, O.—Ordinances have been passed authorizing bond issues for improvement of various streets.

Steubenville, O.—The \$15,000 Unionport and Hopedale pike bonds have been awarded to Miners & Merchants Exchange Bank, of Smithfield, for premium of \$892.10.

Troy, O.—Bids will be received at office of Auditor of Miami County, until 10 a.m., May 6, for purchase of \$40,000 Troy and Piqua pike county improvement bonds. Mahlon T. Staley, County Auditor.

Urbana, O.—Petition asking State aid for improvement of State road from Urbana corporation line for distance of one mile has been approved and will be forwarded to State Highway Commissioners. Similar petition for improvement of one mile of Urbana and Piqua pike through village of Westville has been approved and will be sent to Commission.

Junction City, Ore.—Council has passed resolution providing for paving with hard surface pavement greater part of business section of city.

Abington, Pa.—Montgomery County Court has approved tabulation of vote cast at special election held on April 9 in Abington Township, when it was decided to borrow \$164,000 for highway improvement.

Butler, Pa.—County Commissioners have petitioned State Highway Department to pave Three Degree rd.

Chester, Pa.—Resolution has been introduced that Street Committee advertise

for bids for paving of Butler st., Lincoln st. and Fulton st.

Erie, Pa.—Ordinances for paving and sewerage a number of streets have been approved.

Johnstown, Pa.—Special committee has been appointed to consider bids for combined street sprinkler and flusher.

Reading, Pa.—Mayor Stratton has signed resolutions providing for various street improvements.

Red Lion, Pa.—Borough Council has decided to straighten East Broadway where street curves at new Farmers and Merchants' National Bank Bldg., Center sq. It has also been decided to open West Gay st. to Franklin, and Franklin st., from West Gay to East High st. Number of streets will be macadamized and rail fence will be erected along Summit ave.

Tiverton, R. I.—Plans are being prepared for one mile of macadam.

Woonsocket, R. I.—Alderman Horton is in favor of oiling principal streets at cost of about \$5,000.

Chattanooga, Tenn.—Another bond issue is being considered for completion of street improvements.

Knoxville, Tenn.—City Engineer has been ordered to prepare plans for paving Forest ave.

Morristown, Tenn.—Saturday, April 27, is date set by County Court for citizens of Hamblen County to vote on proposed issuance of \$25,000 in bonds to repair pikes of county.

Nashville, Tenn.—Seventh ave., between Broadway and Church st., will probably be widened.

Nashville, Tenn.—Bills have passed first reading for paving and macadamizing of various streets.

Austin, Tex.—County Judge R. S. Hale, of Bosque County, has submitted record of \$40,000 in road bonds for District No. 7, Valley Mills and vicinity.

Dallas, Tex.—Resolution offered by Commissioner Lee has been adopted instructing Secretary to advertise for bids for paving of Lemmon ave., between Oak Lawn and Throckmorton sts.

Denison, Tex.—Council has authorized City Secretary to advertise for bids for paving of intersection of Woodard st. and Burnett ave.

El Paso, Tex.—Two routes are proposed for extension of Montana st. out to military reservation at Fort Bliss. One of these is to continue along Bliss st. from its intersection with Montana st. and continue northeast along Bliss st., passing Country Club, continuing to Dyer st., and thence to military reservation. Other route is to cut north of Bliss st. at Montana and run through Manhattan Heights and thence follow line to Country Club and on to reservation.

Gilmer, Tex.—Commissioners of Upshur County have voted to build 100 miles of graded roads. Forty miles are now being completed.

Greenville, Tex.—By order issued by Hunt County Commissioners' Court election was called for Precinct No. 1 of Hunt County, to be held Saturday, May 25, to decide whether or not Commissioners' Court shall issue bonds to amount of \$400,000 for purpose of building good roads in precinct. If proposition carries at least 10 macadamized roads will be built leading out from Greenville in various directions.

Terrell, Tex.—City Commission of Terrell is preparing to ask for bids for construction of concrete sidewalks on North Catherine st., South Rockwall ave. and other residence streets of Terrell.

Brigham City, Utah.—Returns from all of important districts indicate that special \$175,000 bond election for county road improvements have been carried by safe majority.

Myton, Utah.—County Commissioner John W. Moffit has announced that work will begin soon on road between Myton and Price. Mr. Moffit thinks that road could be put in fine condition with expenditure of \$8,000.

Norfolk, Va.—Ordinance is being considered for appropriation of \$83,000 for permanent improvements, consisting mainly in paving and of which approximately \$55,000 is for paving in east side of Sixth Ward on 10th, 13th, 14th and 15th sts.

Portsmouth, Va.—Steps are being taken towards improvement of First st.

Everett, Wash.—Movement has been launched to bring about special session of State Legislature for purpose of preparing bill submitting to people of State question of voting State bonds to sum of \$15,000,000 to be used in construction of State highways into commonwealth.

Everett, Wash.—Approval has been given Council Mukilteo highway project by Board of Public Works, which accepted Engineer Barkhuff's plan of construction at estimated cost of \$27,445.

Engineer reported that proposed highway would be 14,231 ft. in length, its width representing 16 ft.

Seattle, Wash.—Resolutions have been adopted for improvement of large number of streets.

Tacoma, Wash.—Question is being considered providing for State bond election next November to vote \$15,000,000 of bonds for State road building.

Tenino, Wash.—Resolution has been passed by Council for paving of four blocks of business section of town. Resolution calls for hard surface paving 40 ft. in width. Engineer will be employed to make survey and estimate of cost of work.

Bellaire, W. Va.—Petition has been received asking for improvement of Franklin st., from 33d st. to Central.

Lake Mills, Wis.—Town of Lake Mills has voted to raise \$600 for roads in 1913 which added to country and State money will make \$1,800.

CONTRACTS AWARDED

Mobile, Ala.—By Mobile County Road Commissioners, to Rockwell & Muth, of Mobile, to pave 18-ft. driveway along Government st., from city limits to Fulton rd.

Little Rock, Ark.—By City, for laying 16,900 sq. yds. of 3-in. 16 lb. wood block paving, 5-in. foundation, 1-in. sand, at \$2.08 per sq. yd. Excavation at 35 cents; also for 7,600 lineal ft. of curbing, 4 x 16-in. stone, at 45 cents; Shelby & Bate-man. Total cost of contract, \$40,881. Ford & MacCrea, engineers in charge.

Oakland, Cal.—By City Council, for improvement of Market st., to Barber Asphalt Paving Co., at following prices: Grading street (cutting), .032 cts. per sq. ft.; curbing (concrete), 86 cts. per lineal ft.; asphalt pavement, 21 cts. per sq. ft. For improvement of Bruce st., to Hutchinson Co., at following prices: Grading street, including sidewalk (cutting), 4 cts. per sq. ft.; grading street, including sidewalk (filling), 4 cts. per sq. ft.; oil macadamizing, 12 cts. per sq. ft.; curbing with 3 x 12-in. Redwood, 14 cts. per lineal ft.; gutters of concrete, 17 cts. per sq. ft. For laying sidewalks on Alcatraz ave., to E. E. Rollins, at 15 cts. per sq. ft. for cement sidewalks. Frank R. Thompson, City Clerk.

Pasadena, Cal.—By City, for sidewalk construction, as follows: India st., J. E. Condron, \$2,092; Fillmore st., Cox & Matthews, \$2,580; Prescott st., J. E. Condron, \$498; Elizabeth st., Baldwin Construction Co., \$4,393; Pepper st., J. E. Condron, \$507.

Pasadena, Cal.—By City, for improvement of Holliston ave., to Baldwin Construction Co., for \$2,250. For work on Walnut st., to Fairchild-Gilmore-Wilton Co., at \$2,553.

South Pasadena, Cal.—By Board of Trustees for paving of Huntington drive, to Andrew Holloway, of Pasadena, at \$75,670.

Fort Pierce, Fla.—By St. Lucie County Commissioners, to Maule & Smith, at \$176,034 for following: 117,000 yds. grading, 9,200 cu. yds. shell in road, 10,000 cu. yds. marl in road, 12,875 yds. marl and shell, 24,000 cu. yds. rock, contract for 100,000 cu. yds. embankment let to same contractor at \$15,000. Engineers are D. D. & C. M. Rogers, Fort Pierce.

Clay City, Ill.—To G. W. Low & Co., Oblong, Ill., for construction of grade and flood gates on Clay City and Newton rd. in Clay City, for 16 cts. per cu. yd. Embankment will be 10,271 ft. long. Flood gates, four in number, will cost \$900.

Monmouth, Ill.—By Board of Local Improvements, for paving East First ave., to Burlington Construction Co., of Burlington, Ia., at \$28,689.

Morris, Ill.—By Board of Local Improvements, for paving of portions of Penton and Washington sts., to Keyes & McNamara, of La Salle, Ill., at \$19,876.

Virden, Ill.—For laying 15,070 sq. yds. brick pavement around public square, to O. W. Eisenmeyer, of Granite City, at \$26,511.

Bloomington, Ind.—For two stone roads in Bloomington Township, Monroe County, to Oscar Sowders and Campbell & Dobson, of Bloomington, Ind., at bids of \$15,900 and \$13,800, respectively.

Indianapolis, Ind.—To Hoosier Construction Co., for paving with wood block, portion of College ave., for \$55,156.

LaFayette, Ind.—For three gravel roads in Tippecanoe County, to William Mahoney, of Greencastle, Ind., whose bids were \$3,737, \$4,247 and \$4,697.

Lawrenceburg, Ind.—To Hayes & Karsstetter, Lawrenceburg, for construction of highway in Clay Township, Dearborn County, at cost of \$5,425.

Martinsville, Ind.—By Morgan County Commissioners, for gravel roads in Monroe and Jefferson Townships, to Frank L. Truax, Monrovia, Ind., and Hawkins Bros., Brazil.

Mt. Vernon, Ind.—By Posey County Board of Commissioners, following gravel road contracts: One road, Mt. Vernon Construction Co., Mt. Vernon; two roads, S. R. Adams, Princeton, Ind.

South Whitley, Ind.—To W. W. Hatch, at \$30,000, for paving with Metropolitan block.

Valparaiso, Ind.—For Liberty gravel road, Porter County, to Ray Demass, Chesterton, Ind., at \$13,340.

Vincennes, Ind.—By Knox County Board of Commissioners, following gravel road contracts: Gibson rd., J. E. McAndrew, Vincennes, \$4,667.40; Kleymer rd., H. F. Jones, Vincennes, \$1,530; Kahre rd., Elmer Summers and Sam Reeves, Edwardsport, Ind., \$3,100; Colgrove rd., Jesse Williams, Wheatland, Ind., \$8,076.80.

Cedar Rapids, Ia.—By City Council, for paving and guttering portions of number of streets, to William Horrabin, Iowa City, 40,700 sq. yds. of asphalt, at \$1.67; McCarthy Improvement Co., Davenport, Ia., 34,000 sq. yds. of concrete pavement, at 92 cts.

Eagle Grove, Ia.—By City Council, for paving, to Des Moines Asphalt Co., at \$1.37 per sq. yd. Specifications call for 5-in. concrete base and 2-in. asphaltic concrete wearing surface. Lowest bid on any kind was \$1.33½ for one-mix Portland cement, but Council considered asphaltic concrete worth additional price. For curbing and guttering goes to C. H. Atkinson, of Watertown, S. Dak. His bid was 48 cts. per lin. ft. for combined curb and gutter and 20 cts. for resetting old curb.

Marshalltown, Ia.—For 48,300 sq. yds. cement paving and 23,000 lin. ft. curbing, to Elzy & Carlson, of Marshalltown, at \$1.08 per sq. yd.

Sioux City, Ia.—By City, for 30,000 sq. yds. concrete paving, 1½-3-4½ mixture, washed gravel or crushed granite pavement 5-in. thick, to P. C. Hansen, at \$1.15 per sq. yd. Other bidders as follows: E. J. Hanlon, Sioux City, \$1.17; Parks, Lefler & Co., S. Omaha, Neb., \$1.17; Jensen & Kegge, \$1.27 and National Roofing Co., \$1.36. Fred C. Smith is City Engineer.

Webster City, Ia.—For about 35,800 sq. yds. paving and 27,300 lin. ft. combined curb and gutter, as follows: (a) brick paving, (b) cement paving, (c) asphalt, (d) bitulithic, (e) curb and gutter per lin. ft. to Zitterell & Sullivan, (a) \$1.96, (b) \$1.56, (c) \$1.39, (d) \$1.98, (e) 49% cts. Other bids as follows: Des Moines Asphalt Paving Co., Des Moines, (a) \$2.09, (b) \$1.73, (c) \$1.50, (e) 65 cts.; M. A. Camery, Harlan, (a) \$1.98½, (b) \$1.32½, (e) 54 cts.; C. A. Atkinson, Watertown, S. Dak., (a) \$1.92, (b) \$1.57, (c) \$1.49; Ford Paving Co., Cedar Rapids, (c) \$1.41, (e) 48 cts.; C. E. Atkinson, Webster City, (b) \$1.53½, (e) 52 cts.; Bryant Asphalt Co., Waterloo, (c) \$1.56, (e) 64 cts.; Lytton Reinking Co., Des Moines, (b) \$1.50, (e) 59 cts.; D. W. Wright Co., Bedford, (a) \$1.99, (b) \$1.65, (c) \$1.56, and Miracle Concrete Co., (e) 59 cts. C. H. Currie, City Engineer.

Louisville, Ky.—For construction of 5,600 sq. yds. of Granitoid sidewalk, at estimated cost of \$8,000, by Board of Public Works, to L. R. Figg & Co., Edward S. Larson, G. W. Younger & Co., and American Concrete Construction Co.

Shreveport, La.—By Caddo Parish Police Jury, Shreveport, for building 17 miles of road, to Texas Grading Co., Houston, Tex., at \$5,939 per mile for gravel, including cost of complete construction.

Baltimore, Md.—By Highway Commission of Towson, for paving section of Third st., Highlandtown, to Geo. C. Long Contracting Co., for \$22,781.

Grand Rapids, Mich.—By Board of Public Works, for Ottawa alley job, to McDermott & Cooper, at \$2,903.55.

Lowell, Mich.—To James A. McKay, for construction of 9,580 sq. yds. of brick pavement, at \$19.170. Work includes 770 sq. yds. of asphaltic concrete. E. H. Christ, Grand Rapids, Mich., is Engineer.

Minneapolis, Minn.—By Board of Park Commissioners, to O. Nordquist and Math Brunzell, 1211 22d ave., N. E., for construction of 4,700 ft. more or less, of artificial stone curbing.

St. Paul, Minn.—By Board of Public Works, for paving of Fourth st., from St. Peter to Seven Corners. Bids will probably be rejected.

Stillwater, Minn.—To Carlston & Landquist, City, at \$1,145.25, for new sidewalks, changes in driveway, etc., at U. S. Post Office.

Flemington, N. J.—By Hunterdon County Freeholders, to William Y. Holt, of Flemington, to place cribbing along Flemington-Whitehouse macadam road near Flemington Junction.

Long Beach, N. J.—By Long Beach Township Committee, to Miller Engineer-

ing Co., for building road connecting with new Manahawkin bridge, at \$36,949.

Long Branch, N. J.—To Richard R. Hughes, of West Long Branch, for constructing gravel road from Seabright to Atlantic Highlands for \$9,951.

Morristown, N. J.—For improving Water st., from Spring st. to railroad bridge, and Western ave., from Ann st. to Plum st., by Board of Aldermen, to Frederick S. Smith, a local contractor. He bid \$1.26 per sq. yd. for Water st. against North Jersey Amiesite Co.'s \$1.30. For Western ave. Smith's bid was \$1.21, while Amiesite Co. asked \$1.25.

Newark, N. J.—For furnishing material, grading, curbing and flagging, to O'Gara & Maguire, 233 Washington st., Newark, for \$6,488.

Paterson, N. J.—Lowest bids on durable pavement for streets have been laid over for one week. Board passed resolution notifying contractors and unsuccessful bidders of its intention to award contracts to lowest bidders so that checks of unsuccessful bidders might be returned at once. Lowest bidders were as follows: Carroll st., between Broadway and Governor st., wood block pavement, Mack Brothers, \$13,662.95. Clay st., Straight to Madison ave., Dolanway block pavement, Mack Brothers, \$12,713.50. The trolley company will pay \$11,480 for paving within and for 18 in. on either side of its tracks with wood block on this street. Ellison st. extension, between Mill st. and Spruce st. and along Spruce st. to the bridge to be paved with close joint granite block, G. F. Brackett, \$13,999. Trolley company to pave with same material at cost of \$3,924. Main st., from Grand to Slater st., to be paved with wood block, Mack Brothers, \$1,019.80. Mill st., from Market to Van Houten st., close joint granite block, G. F. Brackett, \$10,813.25. Contracts for paving of Market st., between Madison ave. and Straight st., are still under discussion. Mack Brothers bid on wood block pavement, \$35,142.35 and Hastings Pavement Co. bid on asphalt block pavement, \$33,173.78.

Albany, N. Y.—By Board of Contract and Supply, for improving McKinley st., from Manning blvd. to Livingston ave., to Benj. F. Mulderry, city, \$4,687.50.

East Rochester, N. Y.—John Keane has been awarded contract for sprinkling village streets.

Kingston, N. Y.—For construction of about two miles of concrete bituminous highway, on Ellenville-Kingston rd., to Hallock & Angle Co., of Newburgh. Successful bid was \$19,965.90. Work is finishing up of highway between Kingston and Ellenville. Bid of DeGraff & Hogeboom was \$19,960.28. Contract for construction of remainder of Cedar Hill Cemetery and Marlborough rd. was awarded to Jova & Kehoe, of Newburgh, for \$35,000. Amount of road to be constructed is about three miles.

Lancaster, N. Y.—To Corry Bridge Co., Corry, Pa., for construction of new bridge over Cuyahoga Creek at Aurora st., at \$11,495.

Olean, N. Y.—To D. D. Dugan, for First st. paving, at \$20,316.

Rochester, N. Y.—By Board of Contract and Supply, for relaying Summerville blvd., to Town Board of Irondequoit, for \$10,000; also contract for paving Portsmouth Terrace with creosote wood block, to Brotsch, Hempel & Brotsch, at \$18,504, and to Whitmore, Rauber & Vicinus, for paving Spring st., at \$9,389.

Utica, N. Y.—To Harry W. Roberts & Co., for repair work on asphalt pavements, at \$1.20 per sq. yd. to lay sheet asphalt, \$2.25 per sq. yd. for asphalt pavement, including concrete base, and \$3 for extra binder per cu. yd.

Utica, N. Y.—By City, for eight paving contracts, to Harry W. Roberts & Co., for paving Lexington pl., from Elm st. to High st. with Mack brick; with natural curb, to J. W. Johnstone, and for resurfacing Conklin ave. and Seymour ave., to Warren Brothers.

Murphy, N. C.—By Murphy Township Highway Commission, for grading Valley and Notla rds., 7.5 and 4.7 miles, respectively, including 67,000 cu. yds. grading and 1,500 lin. ft. vitrified pipe, to Able Huggins & Fry, of Murphy, for \$26,000.

Fargo, N. Dak.—To James Kennedy, for paving of streets of Third Ward with bitulithic, at \$75,174, this not including alley approaches and street crossings.

Cincinnati, O.—By Hamilton County Commissioners, to John Ruebel Construction Co., 4120 Virginia ave., Cincinnati, for improvement of Round Bottom rd., near Clermont county line, at \$8,189. Albert Reinhardt is Clerk.

Gallon, O.—By Board of Public Service, to Lambert Bros. & Wirt, Delaware, O., for paving portions of Atwood and Railroad sts.

Marion, O.—By Department of Public

Service, to Gustave Kohlberger, at \$2,701.64, for macadam paving in Bennett st.

Massillon, O.—To A. F. Wendling, local contractor, for improvement of Massillon-Navarre rd., by County Commissioners. The contract price was \$14,900. Road will be improved for three-quarters of mile from Massillon corporation line.

Sebring, O.—To P. Horn & Son, Canton, O., for 10,000 sq. yds. of paving for Sebring.

Toledo, O.—By Board of Control, for paving, as follows: Henry Sheehan & Son, 1208 Collingswood st., with Metropolitan block, Hoag st., \$17,506, and Ewing st., \$6,894; Peters Bros., with vitrified block on Delaware ave., \$14,227, and to P. Waters, with vitrified block, on Utah st., at \$7,174; Carpenter & Anderson, sheet asphalt, Michigan, Collingwood and Grand aves., at \$22,739; Asphalt Paving Block Co., with asphalt block, Nessler st., \$15,983; H. P. Streicher, sheet asphalt, Waite ave., \$11,987.

Youngstown, O.—To C. T. Chinoack, Warren, O., for improving Beaver rd., in Mahoning County, at \$13,887.

Eugene, Ore.—By City Council, to Clark & Henry Construction Co., for paving of East Eighth st., from High to Mill Race, and also portion of Fairmount Blvd.

Salem, Ore.—For paving S. 14th st., to Jahn Contracting Co., for \$12,774.

Chester, Pa.—By Select and Common Councils, for remaining streets to be paved under provisions of \$600,000 loan bill, to Filbert Paving & Construction Co., of Philadelphia, at \$1.72 per sq. yd.

Philadelphia, Pa.—For hauling crushed stone for hard road to be built to Lakeside Cemetery, to Fred Schaefer, at 55 cts. per ton.

Fort Mills, S. C.—To A. E. Legane, Columbia, S. C., for improving Main st.

Chattanooga, Tenn.—For constructing 45 miles of pike roads in McMinn County, as follows: R. H. Crox & Co., 20 miles; Denton Bros., of Sweetwater, 9 miles, and Christ & Co., of Knoxville, 16 miles.

Dallas, Tex.—To Tiffin Crushed Stone Co., for rock to be used in building Dallas County roads, at 76 cts. per cu. yd. of 2,240 lbs., with guarantee of freight rate of 70 cts. per ton. Order to be placed by county is to be for not more than 30,000 cu. yds. and for not less than 12,000 cu. yds.

Denison, Tex.—By City, to Murphy-Moulton Co., of Denison, to pave E. Main st.

Denton, Tex.—To O. E. Cobb, of Lewisville, for \$6,500 a mile, for rock-macadam roads and \$2,395 a mile for gravel-surfaced roads. It is expected to build between 28 and 30 miles of road in this district, most of it gravel, rock-macadam roads being through Elm bottom east of Lewisville. Six bids on work were received, ranging from \$6,500 a mile for macadam and \$2,825 for gravel down to price of successful bidder.

Stafford, Tex.—By Fort Bend County Commissioners, to M. M. Cravens, Missouri City, Tex., at \$18,343, to build gravel road from Stafford to De Walt, 3 1/4 miles.

Bellingham, Wash.—By City, for constructing pavement and culverts on three roads, to Independent Asphalt Co., of Bellingham, and Hardy Construction Co., of North Yakima, for about \$52,700.

Olympia, Wash.—By City, for paving Main and Third sts., to Independent Asphalt Paving Co., of Seattle, for \$23,570.

Bluefield, W. Va.—By City, to Kelley Bros., Portsmouth, O., at about \$50,000, to pave with bituminous macadam Bluefield ave., 5,500 lin. ft.; Highland ave., 3,038 lin. ft.; Giles st., 2,036 lin. ft.; Tazewell st., 1,340 lin. ft.; Russell st., 1,266 lin. ft.; Duhring st., 1,263 lin. ft.; Walnut st., 640 lin. ft.; Ramsey st., 635 lin. ft.; S. Mercer st., from Bluefield ave. to Duhring st., and North st., from S. Bland to Jefferson st.; Bluefield ave. to be 30 ft. S. Mercer, 34 ft.; North st., 28 ft., and remaining streets, 24 ft. wide; concrete curb and gutter on all streets except Bluefield ave. W. H. Campbell is engineer in charge.

Lynchburg, Va.—By City Council, for improvement of streets in west end, to Jones & Adams, at \$83,543. Bids were as follows: Bid of Cleveland-Trinidad Asphalt Co. for paving this entire section with asphaltic concrete, similar to paving to be used in Rivermont ave., was \$100,527. Six bids for tar macadam were: Jones & Adams, \$83,543; S. B. Bennington, \$89,557.73; J. R. Ford Co., \$91,839.75; Cleveland-Trinidad Asphalt Co., \$96,437; Virginia Construction Co., \$98,811.90.

Green Bay, Wis.—For asphalt and tar macadam pavements, to White Construction Co., of Milwaukee, by City Council, for improvement work to be done; estimated cost \$84,100.

Sturgeon Bay, Wis.—To Thos. Carmody for macadamizing Egg Harbor rd.

Milwaukee, Wis.—To Milwaukee Sidewalk Co., at \$2,550, for laying new sidewalks at the U. S. Post Office and Court House.

BIDS RECEIVED

Wilmington, Del.—For constructing roads: (a) Road from New Castle to Hare's Corner, 1.36 miles; (b) Adams Cross rds., 1.63 miles; (c) road from Marshalltown to Stanton, .84 miles; (d) road from Stanton to Oak Tree, .6 mile; (e) Pike's Creek rd., 3 miles; (f) Wilmington and New Castle rd., .71 miles; Junita Paving Co., (a) \$11,011, (b) \$17,472, (c) \$9,101, (d) \$5,674, (e) \$1,033; John A. Clark, (a) \$10,800, (b) \$19,550, (c) \$8,400, (f) \$1,900; Ambler Davis Co., (a) \$9,766, (b) \$17,428, (c) \$8,690, (d) \$5,764, (e) \$34,872, (f) \$6,780; Stewart & Donohue, (a) \$12,000, (c) \$10,193, (d) \$5,294, (e) \$38,500, (f) \$8,131; Horrigan Contracting Co., (a) \$11,327, (f) \$7,575; W. C. Evans, (a) \$11,893, (b) \$21,008, (d) \$6,554, (e) \$26,978, (f) \$6,989; Talley & Crumlist, (a) \$13,394, (f) \$7,796; Patrick J. Mundy, (b) \$16,000, (c) \$7,429, (d) \$5,600, (e) \$27,000; D. E. O'Connell & Son, (b) \$17,925; Schunemunk Construction Co., (c) \$12,603, (d) \$8,252, (f) \$10,620; John F. O'Neil, (b) \$16,131; Corcoran Construction Co., (b) \$19,235; Wm. Davis, (c) \$7,806, (d) \$5,128.

Michigan City, Ind.—For paving Baltimore st., as follows: Peter Michaely, Metropolitan block, \$1.94; Townsend block, \$1.94; Alliance block, \$1.92; Poston block, \$1.90; Terre Haute block, \$1.87; asphalt, \$1.70; special brick for street car track, 5 cts. extra per lineal ft.; combined curb and gutter, 38 cts.; curb, 28 cts.; gutter, 28 cts.; headers, 30 cts. Western Construction Co., Trinidad or Bermudian Lake asphalt macadam, \$1.67; curb and gutter, 38 cts.; curb, 22 cts.; gutter, 22 cts.; headers, 20 cts.

Louisville, Ky.—Bids for building 12 blocks of vitrified block street, have been opened by Board of Public Works. Range of prices offered was among lowest ever known, and five contracts submitted bids, their prices and names being: G. W. Gosnell & Co., from \$1.78 to \$1.80; the L. W. Hancock Co., from \$1.80 to \$1.90; L. R. Figg & Co., six pieces, from \$1.71 to \$1.75; the Henry Bickel Co., from \$1.86 to \$1.90, and the Jefferson County Construction Co., from \$1.90 to \$1.93.

Louisville, Ky.—Bids for original construction with asphalt paving amounting to \$54,000 have been opened by Board of Public Works. Streets to be improved are: Bismarck ave., from 28th st. to 34th st.; 41st st., from Broadway to Chestnut st.; Lee st., from Fifth st. to Sixth st., extended, and Galt ave., from Frankfort ave. to Payne st. Bidders and their prices were: Louisville Asphalt Paving Co., \$1.75 to \$1.95 a sq. yd.; Bickel Asphalt Paving Co., \$1.75 to \$1.85 a sq. yd.; Jefferson Construction Co., \$1.83 for five pieces, and American Standard Asphalt Paving Co., \$1.80 to \$1.95 a sq. yd.

Mt. Vernon, N. Y.—Bids for regulating, paving and improving of several of the city's streets were opened and read as follows: Macadam pavement on Franklin ave.: Sabino Guarino, new curb, \$1; old curb, 50 cts.; granite blocks relaid, \$1; macadam, \$1.30; brick pavement relaid on four inches of concrete, 40 cts.; new brick pavement on four inches of concrete, \$2.40; flag walks, 75 cts.; flags relaid, 15 cts.; curb headers, 50 cts.; Louis Petrillo, new curb, 96 cts.; old curb, 35 cts.; granite blocks relaid, 40 cts.; macadam, \$1.27; bricks relaid on four inches of concrete, \$1.25; new bricks on four inches of concrete, \$2.39; flags, 79 cts.; flags relaid, 15 cts.; curb headers, 60 cts. Frank Nordone, new curb, 99 cts.; old curb, 60 cts.; granite blocks relaid, \$1.03; macadam, \$1.35; bricks relaid on concrete, 35 cts.; new bricks on concrete, \$2.36; flags, 80 cts.; flags relaid, 13 cts.; curb headers, \$1.05. James Clarcia, new curb, \$1.05; old curb, 65 cts.; granite blocks relaid, \$1; macadam, \$1.40; bricks relaid on concrete, \$1.25; new bricks on concrete, \$2.35; flags, 85 cts.; flags relaid, 15 cts.; curb headers, 90 cts. James Piro, new curb, 98 cts.; old curb, 40 cts.; granite blocks relaid, \$1; macadam, \$1.25; bricks relaid on concrete, 50 cts.; new bricks laid on concrete, \$2.34; flags, 75 cts.; flags relaid, 12 cts.; curb headers, \$1. Franklin ave., brick pavement: Sabino Guarino, new curb, \$1; old curb, 50 cts.; granite blocks, \$2; bricks relaid, \$1.10; brick pavement, \$1.60; flags, 75 cts.; flags relaid, 15 cts.; headers, \$1. Frank Nordone, new curb, 99 cts.; old curb, 60 cts.; granite blocks, \$1; bricks relaid, \$2; brick pavement, \$2.57; flags, 80 cts.; flags relaid, 12 cts.; headers, 90 cts. James Piro, new curb, 98 cts.; old curb, 40 cts.; granite blocks, \$1; bricks relaid, 75 cts.; brick pavement, \$2.55; flags, 75 cts.; flags relaid, 12 cts.; headers, \$1. Louis Petrillo, new curb, 96 cts.; old curb, 60 cts.; granite blocks, \$2.40; bricks relaid, \$1.61; brick

pavement, \$2.60; flags, 80 cts.; flags relaid, 14 cts.; headers, \$1. Bituminous macadam on Fulton ave.: Dayton Hedges, new curb, 74 cts.; old curb, 35 cts.; bituminous macadam, \$1.84; brick pavement, \$2.50, vitrified stone pipe, \$2.50; receiving basins, 90 cts.; flags, 70 cts.; flags relaid, 10 cts.; curb headers, 70 cts.; stringers under railroad, 50 cts. McGovern Contracting Co., new curb, 75 cts.; old curb, 25 cts.; bituminous macadam, \$1.75; bricks relaid, \$2.25; vitrified pipe, \$1; receiving basins, 50 cts.; flags, \$1; flags relaid, 10 cts.; curb headers, 50 cts.; stringers, 30 cts. Eastern Asphalt Co., new curb, 75 cts.; old curb, 25 cts.; bituminous macadam, \$1.72; brick pavement, \$2; vitrified stone pipe, \$1; receiving basins, \$50; flags, 70 cts.; flags relaid, 10 cts.; headers, 60 cts.; stringers, 29 cts. Fulton ave., brick paving: Louis Petrillo, new curb, 65 cts.; old curb, 40 cts.; brick pavement relaid, \$1.25; brick pavement, \$2.25; vitrified pipe, \$5; receiving basins, \$200; flags, 75 cts.; flags relaid, 16 cts.; headers, 60 cts.; stringers, 34 cts. For the regulating, grading and paving of North High st.: Charles Mattola, new curb, \$1; old curb, 80 cts.; crosswalks relaid, 75 cts.; macadam, \$1.40; bricks relaid, 25 cts.; brick pavement, \$2.35; flags, 60 cts.; flags relaid, 13 cts.; headers, 80 cts. Jas. Clarcia, new curb, 99 cts.; old curb, 75 cts.; crosswalks relaid, 55 cts.; macadam, \$1.35; bricks relaid, \$1.15; brick pavement, \$2.33; flags, 62 cts.; flags relaid, 16 cts.; headers, 75 cts. Sabino Guarino, new curb, 97 cts.; old curb, 50 cts.; crosswalks relaid, 50 cts.; macadam, \$1.40; bricks relaid, \$2.40; flags, \$1.05; brick pavement, \$2.40; flags, 65 cts.; flags relaid, 15 cts.; headers, 90 cts. James Piro, new curb, 98 cts.; old curb, 60 cts.; crosswalks relaid, 50 cts.; macadam, \$1.40; bricks relaid, \$1.10; brick pavement, \$2.30; flags, 65 cts.; flags relaid, 15 cts.; headers, 90 cts. Frank Nordone, new curb, 96 cts.; old curb, 60 cts.; crosswalks relaid, 45 cts.; macadam, \$1.35; brick relaid, \$1; brick pavement, \$2.30; flags, 60 cts.; flags relaid, 15 cts.; headers, 80 cts. Louis Petrillo, new curb, 89 cts.; old curb, \$1; crosswalks relaid, \$1.25; macadam, \$1.40; bricks relaid, \$1.25; brick pavement, \$2.33; flags, 90 cts.; flags relaid, 11 cts.; headers, 90 cts.

Niagara Falls, N. Y.—For proposed pavement in Portage rd. and in 18th st., as follows: On Portage rd., Burgard, sheet asphalt, \$2.25 per yd., total \$85,020.50; Burgard, Barber asphalt block, \$2.45 per yd., total, \$87,985.50; Read-Coddington, hassam, \$1.95, total, \$73,180.50; Read-Coddington, Penn asphalt block, \$2.65, total, \$93,935.50; Warren Bros. Co., sheet asphalt, \$2.16, total, \$79,049.50; Warren Bros., bitulithic, \$2.43, total, \$87,055.; Public Service Contracting Co., brick, \$2.34, total, \$85,525.50; George Neilson, Bessemer brick, \$2.12, total, \$76,249; Spire & Pryor, bitulithic, \$2.2, total, \$80,976.50. For 18th st. pavement: Burgard, sheet asphalt, \$2.35, total, \$29,085.50; Burgard, Barber block, \$2.45, total, \$29,873.50; Spire & Pryor, bitulithic, \$2.25, total, \$27,784; Warren Bros., sheet asphalt, \$2.24, total, \$27,963.15; Warren Bros., bitulithic, \$2.44, total, \$29,539.15; Read-Coddington, Penn block, \$2.65, total, \$31,477; Read-Coddington, hassam, \$1.95, total, \$25,961; Read-Coddington, brick, \$2.10, total, \$26,332.75.

Yonkers, N. Y.—For regulating, grading, paving and otherwise improving Kimball ave., from Yonkers ave. to Mile Square rd., as follows: For macadam pavement, Frank J. Kelly, \$38,205; Anthony Fisher, \$48,736; O'Rourke Contracting Co., \$49,965; William J. Watson Contracting Co., \$54,777; Fred E. Gross & Son, Inc., \$45,789; Nicholas Mangini, \$47,393. For Telford macadam pavement, Anthony Fisher, \$50,405; Wm. J. Watson Contracting Co., \$54,777; Fred E. Gross & Son, Inc., \$47,781; Canepi & Nolan, \$47,712.50. For hassam compressed concrete pavement, Connecticut Hassam Paving Co., \$66,898.05. James V. Mahony, Secretary.

Fargo, N. Dak.—For paving of Third Ward, as follows: Steve Birch & Sons, sheet asphalt, \$1.82 per yd.; bitulithic, \$2.10 per yd.; bituminous concrete, \$1.42 per yd.; cement concrete, \$1.30 per yd.; brick, \$2.32 per yd.; creosote block, \$2.40 per yd. James Kennedy, brick, \$2.40 per yd.; bituminous concrete, \$1.64 per yd.; bitulithic, \$1.90 per yd.; creosoted block, \$2.55 per yd.; creosoted block, no grade, \$2.40 per yd.; cement concrete, \$1.30 per yd.; sheet asphalt, \$1.85 per yd. There were two other bids. One was by Warren Bros. for bitulithic, at \$2.20, and the other was by O. C. Chapin for Dolarway, at \$1.17.

Seattle, Wash.—For cement walks in 20th ave., N. E., as follows: C. Isedor & Co., \$9,327.95; D. H. Traphagen, \$9,373.75; Krogh & Jensen \$9,442.35; Penn & Brennan, \$9,589.45; De Flong & Helborg, \$10,008.55; Andrew Peterson & Co., \$10,365.26; Jenkins & Jones, \$10,403.75; S.

Lamping Co., \$10,966.26; Elliott Construction Co., \$11,001.30. For Fourth ave., south, paving: P. J. McHugh, \$29,869.30; Independent Asphalt Co., \$28,899.15; Barber Asphalt Paving Co., \$28,140.50. For 25th ave. north, concrete walks: Krogh & Jensen, \$896; De Flong & Heltborg, \$874.10; C. G. Nixon, \$868.46; D. H. Traphagen, \$853.80; Edgar C. Parks, \$835.30. For Harvard ave. north, paving: Sparger Concrete Co., \$8,305.40; S. Normile, \$8,181.25; Fern & Brennan, \$8,108.85; P. J. McHugh, \$8,070.25; Xuria Case, \$7,935.50. For Newport ave. concrete walks: Frasco Coluccio, \$10,493.79; Edgar C. Parks, \$10,307.70; Krogh & Jensen, \$9,010.70; De Flong & Heltborg, \$9,453.60; D. H. Traphagen, \$9,396.55.

SEWERAGE

Portola, Cal.—Portola is soon to have modern sewer system. Western Pacific is preparing to install system for its own use and will extend it for use of other property owners at nominal cost. Town was surveyed last fall for this purpose. First unit to be laid is for population of 1,500 people, but mains put in are to be large enough so that other units may be added as required. Large septic tank to handle sewage is also planned.

Sacramento, Cal.—Data upon which comprehensive scheme of drainage for annexed district is planned is being secured by large force of engineers and surveyors under direction of City Engineer Randle and will be submitted to Trustees in several months.

Sisson, Cal.—People have voted bond issue of \$40,000 for installation of sewer, water and light systems.

Indianapolis, Ind.—Resolutions have been adopted for construction of main sewer in Brightwood, from 25th to 26th sts., and local sewers in various alleys.

South Bend, Ind.—Preliminary arrangements for construction of Bowman Creek trunk sewer, which will be largest in this section, have been completed by Board of Public Works after two years preparations. Board asked resolution for improvement. Sewer will cost approximately \$130,000. It will be more than two miles in length, and at point where it empties into St. Joseph River, pipe will be from 10 to 12 ft. in diameter.

South Bend, Ind.—Estimates on a number of sewer improvements have just been submitted to Board of Public Works by City Engineer William S. Moore. Contracts for work will be let within short time. Improvements and estimates are: Sewer on Allen st., from Van Buren st. to Vassar ave., \$2,340; Miner st., from Notre Dame to Eddy sts., \$1,468; Olive st., from Longley to Michigan aves., \$4,577; Johnson st., from Michigan to Vassar aves., \$1,636; Sample st., from Olive to Webster sts., \$9,234; College st., from Michigan ave. to 200 ft. south, \$2,393; and Ford st., from Olive to Kosciusko sts., \$6,210.

Mansfield, La.—Plans are being prepared for installation of sewers.

Opelousas, La.—Bonds to sum of \$40,000 have been sold to be used for sewer system.

Sumner, Miss.—Appropriation of \$22,500 is planned for sewer system, electric lights and water works.

Springfield, Mo.—Bids will be received by City Clerk at City Hall, until 9 a. m., May 7, for purchase of \$70,000 bonds for constructing and improving general sewer system of city. J. H. Langston, City Clerk.

Lewistown, Mont.—Consulting Engineer Swearingen, of Missoula, has presented to City Council exhaustive report on plans of City Engineer McClean for sewer system, chief change recommended being made is to provide for separate storm and sanitary sewers, instead of combining them. Resolution fixing date for sale of \$60,000 sewer bond issue for May 20 was then passed.

Bloomfield, N. J.—Bloomfield Town Council has passed provisional resolution to enter into Passaic Valley sewer project. Measure declares town's willingness to sign contract to go into big drain, provided town gets benefit of any concessions that might be made in future to Montclair or the Oranges.

Newark, N. J.—Bids will shortly be asked by Passaic Valley Sewerage Commission for first contract for construction work on proposed trunk sewer.

Ocean Grove, N. J.—A special election \$35,000 was voted for disposal plant purposes by the taxpayers. No system has yet been determined upon.

Trenton, N. J.—Ordinances have been passed to authorize construction of Sewer No. 553, in Indiana ave., Strawberry st. and New York ave., and construction of Sewer No. 542, in Logan, Farragut and Cleveland aves.

Schenectady, N. Y.—City Engineer W. Thomas Wooley will submit plans for ex-

tension of sewer system in lower Van Vranken ave. at next meeting of Board of Contract and Supply. Plans and specifications are now being worked out in Bureau of Engineering.

Cincinnati, O.—At city bond budget meeting about \$350,000 was allowed for new sewers.

Coshocton, O.—City is said to be planning to build sewage disposal plant and pumping station to cost about \$100,000.

Dayton, O.—City Council has appropriated \$35,000 for construction of storm water sewers on certain streets.

Hubbard, O.—Lowest bid received for completion of sewer contract was that of Central Construction Co., of Parkersburg, W. Va., at \$21,245.

Urbana, O.—Ordinance has been passed by City Council which declares determination of Council to provide for sewerage system for city. City Engineer Pratt estimates total cost of system, exclusive of disposal plant, at \$90,900.80.

Klamath Falls, Ore.—Sewer system will be installed in Klamath Falls this season for sanitary purposes.

Chester, Pa.—Residents of 24th st., between Providence and Edgmont aves., are urging construction of sewer on that thoroughfare.

Erie, Pa.—Ordinances for sewerage and paving number of streets have been approved.

Hazleton, Pa.—Sewer Committee has taken action on ordinance providing for construction of sewer on Alter st., from Seventh to Ninth sts.

Reading, Pa.—Mayor Stratton has signed resolutions providing for construction of sanitary sewers in various streets.

Pierre, S. Dak.—Bonds for sewer extensions have been carried by good vote.

Fort Worth, Tex.—Petition asking that storm sewer be installed on 13th st., from west line of Throckmorton, east to the west line of Commerce st., has been received and filed.

Fort Worth, Tex.—Residents of Lake View are urging speedy action in reference to installing sewerage system.

Orange, Tex.—Commissioners' Court of Orange County are considering report of Civil Engineer L. F. Daniel, who had been employed to survey and furnish estimate of cost of proposed drainage district No. 1, embracing approximately 35,000 acres, accompanied by blue prints and working plans itemizing cost, which totals \$30,264.66. Election will be held in May on bond issue for same.

San Benito, Tex.—Citizens are said to have voted issuance of \$58,000 bonds for sewers and street improvements.

Richmond, Va.—Construction of sewer in Grove ave., from Rosemeath rd. to new corporation line, to cost \$1,151.89, has been authorized; extension of sewer in Seventh st., between Main and Franklin sts., to new building of Virginia Railway & Power Co., to cost \$172.85; extension of sewer in Main st. to connect with Crenshaw ave. sewer, to cost \$1,577.62; construction of sewer in Williamsburg ave., from 10th to Scott st., to cost \$4,609.17; sewer in Beverly st., from Mulberry st. to the Boulevard, to cost \$511.72; sewer in Louisiana st., from Marshall to Union st., to cost \$1,454.86; sewer in Peach st., with connection for Atlantic Varnish Works, to cost \$456.28; sewer north of Main st. in alley east of 29th st., to cost \$183.92.

La Crosse, Wis.—Board of Public Works is considering completion of sewer system of south side, to cost about \$97,407.

CONTRACTS AWARDED

Oakland, Cal.—By City Council, for construction of sewers in various streets, to Piedmont Construction Co., at following prices: Furnishing and laying 8-in. pipe, at 60 cts. per lineal ft.; furnishing and laying 10-in. pipe, at 70 cts. per lineal ft.; furnishing and laying 12-in. pipe, at 80 cts. per lineal ft.; furnishing and laying 14-in. pipe, at 95 cts. per lineal ft.; furnishing and laying 8-in. Y branches, at 60 cts. each extra; furnishing and laying 10-in. Y branches, at 90 cts. each extra; furnishing and laying 12-in. Y branches, at \$1 each extra; furnishing and laying 14-in. Y branches, at \$1.40 each extra; constructing brick manholes, with covers, complete, \$37.50 each; constructing lamp-holes, with covers, complete, \$10 each. Frank R. Thompson, City Clerk.

Saratoga, Cal.—To John M. Reynolds, for sewer system and septic tank for Saratoga Sanitary District No. 1, for about \$7,583.

Bellefonte, Ill.—By Board of Public Improvements, for construction of Crystal pl. sewer, to Herman C. Gass, for \$8,356.

Bloomington, Ill.—To McDonald & Rider, city, at \$970.06, for construction of sewers in Mill and Vale sts. Elmer Folsom is City Engineer.

Vincennes, Ind.—By Vincennes Sewer

Co., for \$210,000 sewer system for city of Vincennes, to Steward Sheets & Co., S. Second st., Vincennes.

Winchester, Ind.—By City Council, to Helms & Houston, for construction of sanitary sewer.

Davenport, Ia.—By Board of Public Works, to Adolph Kahles, for construction of sewer in Vine st. A. M. Compton is City Engineer.

Muscataine, Ia.—To D. E. Keller, Davenport, Ia., at \$13,293.25, for construction of a vitrified pipe sewer on Grandview ave., Muscatine.

Webster City, Ia.—By Board of Commissioners of Webster County, for construction of tile drains in Bear Creek Drainage District No. 124 and Holdra'er Drainage District No. 125, to Humrey & Ekewald, Emmetsburg, Ia., at \$8,092.55 and \$9,418.82, respectively.

Bogalusa, La.—For constructing 8- and 10-in. sanitary sewer for residential district in North Bogalusa, to Hamilton Johnson, of Jackson, Miss., for \$6,940.

Westfield, Mass.—By Board of Selectmen, for furnishing sewer pipe, about 8,000 lin. ft. 8- to 18-in., to Mosely & Maschin, of Westfield, at 77 per cent. off less price.

Pontiac, Mich.—To John Lennane, Detroit, at \$17,882, for construction of 12- to 209 ft. of sewers for Pontiac. C. L. Groesbeck is City Clerk.

Red Bank, N. J.—By Council, for constructing sewer system in Bridge ave., to James Norman & Son, at \$707.20, and for extension of sewer system in South st., to Monmouth Contracting Co., at \$874.

Binghamton, N. Y.—By Board of Contract and Supply, to Geo. Serafini, contract for sewers, to cost about \$15,000.

Rochester, N. Y.—By Board of Contract, for construction of Humboldt st. sewer, to John Petrossi Co., at \$2,155.25.

Beaver, Pa.—By Sewer Committee, to J. L. Conner, Freedom, Pa., for construction of sewers.

Chester, Pa.—By Select and Common Councils, for construction of sewers on Lloyd st., Sixth st. to Seventh st., to M. Honan Co., lowest bidder; contract for sewers on Bunting st., Central ave. and extension to Ivy st. sewer, to Pritchard & Oliver, while J. Hanna & Sons, received contract for sewers on Crosby st. and on Chestnut st., 15th to 16th sts.

Chester, Pa.—For sewer and water connections, to John A. Morgan, as follows: Sewer connections, long, \$13; short, \$6; central, \$13. Blasted rock, per cu. yd., \$4.50.

North Braddock, Pa.—To Phillips & George, at \$464.32, for construction of 336 ft. of 12-in. and 54 ft. of 6-in. pipe sewer, one manhole and three receiving basins in Sylvan ave.

Warren, Pa.—By Board of Trustees State Hospital for Insane at Warren, for 8,700 ft. 8-, 10- and 12-in. t. c. pipe sewers; receiving well and pump house; two centrifugal pumps, driven by electric motors, capacity each, 500-gal. per minute; laying 3,850 ft. 10-in. cast iron force main; constructing disposal plant consisting of settling tanks, sprinkling filter, chemical house and sludge filters, to P. L. Schrell & Co., of Reading, for \$37,300.

Dallas, Tex.—By City Commissioners, for construction of storm sewers in McKinney ave., to Dallas Home Improvement Co., at \$1,045.77, and in Houston st., to Mueller & West, at \$1,389.77.

Pecos, Tex.—By City Council, to C. W. Clayton, of this city, for putting in drainage system in business and semi-residential district of city. Contract calls for laying of 4,500 ft. of drainage tiling and accessories.

Marinette, Wis.—For extension of Bangs and Currie st. sewer, 36-in. 2-ring brick sewer, to Johnson & Teander, of Marinette, for \$11,901.

WATER SUPPLY

Mobile, Ala.—Improvements are being considered for water supply system.

Oxnard, Cal.—By vote of four to one citizens of Oxnard have authorized bond issue of \$130,000. This fund is to be divided, \$100,000 going to water plant and \$30,000 for municipal lighting system.

Red Bluff, Cal.—Plans are being prepared for establishing of municipal water and electric light and power plants in Red Bluff. Water system will cost about \$85,000 and the lighting system, including generating plant, \$146,000. It is proposed to issue bonds.

Sisson, Cal.—People of Sisson, Siskiyou County, have voted bond issue of \$40,000 for installation of water, light and sewer systems.

De Beque, Col.—Bond issue of \$20,000 has been voted for purchase of mountain water supply.

Fountain, Col.—It is proposed to construct municipal water works.

Bidgway, Col.—Bonds in sum of \$30,000 have been voted for purchase and improvement of present water plant.

Berlin, Va.—Election will be held May 11 for voting on \$7,000 bond issue for construction of water works.

Piper City, Ill.—J. E. Pickens, of Kankakee is preparing plans for installation of water works, estimated to cost \$20,000.

Denance, Ia.—City will install water works system to cost about \$8,000.

Coneyville, Kan.—A \$130,000 bond issue for increasing capacity of city water plant and adding filtration plant has been carried by six to one vote in special election.

Mansfield, La.—Plans are being prepared for installation of water works.

Bangor, Me.—Recommendations of Superintendent Sinclair for laying 3,723 ft. 6-in. main have been approved by Water Board.

Rail River, Mass.—City is considering \$20,000 appropriation for water works extensions.

Wakefield, Mass.—Installation of meters in water system is being discussed; estimated cost, \$15,000.

Grand Rapids, Mich.—Bonds in sum of \$100,000 have been voted for water works extensions.

Pontiac, Mich.—City Commissioner Dewey has announced that Water Department is seriously in need of new pump at pumping station. At present pump of 5,000,000-gal. daily capacity supplies entire city, running 24 hours per day without shut down. He advises purchase of a 6,000,000-gal pump to carry half the load. Expense would be \$28,000.

Sumner, Miss.—Appropriation of \$22,500 is planned for water works, electric lights and sewer system.

Kenilworth, N. J.—Borough Council has voted in favor of contract which was presented by Amos Andrews, Superintendent of Plainfield-Union Water Co., for supplying town with water.

Spencer, N. C.—Installation of municipal water works is being considered.

Cortland, N. Y.—Water Board proposes to lay new 16-in. main in West Court st.

New York City, N. Y.—Bids will be received until 2 p.m., May 7, by Controller Prendergast, at 280 Broadway, New York, for purchase of bonds, amounting to \$65,000,000, of which \$20,000,000 is for water improvements.

Oneida, N. Y.—Special election is being considered for issuing \$10,000 in bonds for water main extensions.

Oriskany Falls, N. Y.—New reservoir will be erected to cost about \$4,500.

Syracuse, N. Y.—Board of Contract and Supply will shortly advertise for proposals to furnish Bureau of Water with 449 tons of cast iron pipe for extending water mains, and 60,000 lbs. of special castings.

Durham, N. C.—Plans are being considered for extension of water system; estimated cost, \$150,000.

Dayton, O.—Resolution is being considered for installation of water meters in all public institutions.

Lisbon, O.—City Clerk H. E. Marsden has sold \$10,000 worth of water works improvement bonds to Firestone Bank of Lisbon, for \$10,007.75.

Bigheart, Okla.—Installation of water works system, to cost about \$12,000, will be considered.

Perkins, Okla.—Plans are being considered for installation of water works; cost, \$25,000.

Bay City, Ore.—Bay City is to have new water system during coming summer. Plans are now being drawn by Bay City Land Co. to replace entire plant. System will be extended to entire city and hills. A six-in. main will be laid in business district, giving ample protection in case of fire. It is estimated \$5,000 will be spent.

Woodburn, Ore.—Formal transfer of local water works to city of Woodburn has been effected, price being \$9,650. R. K. Page was former owner.

Allentown, Pa.—Allentown Water Department has been directed to look into question of increased water supply.

Erie, Pa.—Work on water works improvements will probably be started June 1. Plans for improvements have been approved by Board of Water Commissioners. Plans approved, together with plans recently accepted, call for expenditure of \$528,000. Money will be spent for new standpipe to be erected near reservoir in 26th st., new pumping station, filtration plant, gigantic pump and for making changes in old station.

Vacaton, S. Dak.—Proposition to issue \$60,000 worth of bonds for purpose of laying new water mains and erection of water tower has been carried by large majority.

Tiptonville, Tenn.—Plans are being made for installation of water system.

Gordonsville, Va.—Bonds in sum of

\$10,000 have been voted for extension to water system.

Centralla, Wash.—Election will be held May 7 for voting on installation of water system of gravity type; estimated cost, \$250,000.

Chehalis, Wash.—Preliminary plans have been prepared for gravity water system to include about 15 miles of 14-inch water mains.

Spokane, Wash.—New automobile is to be purchased by city water department for use by meter installation and repair crew.

CONTRACTS AWARDED

Gloucester, Mass.—By Water Commissioners, for purchase of cast iron pipe, to United States Cast Iron Pipe & Foundry Co., for 6,000 ft. of 6-in. pipe, 600 ft. of 10-in. pipe and 650 ft. of 14-in. pipe, at \$2.45 per ton net, free on board at Gloucester. Bids were also received from R. D. Wood & Co., Philadelphia, \$24.70 for 6-in. and 10-in. pipe and \$23.70 for 14-in. pipe, and the Warren Foundry Machine Co., \$24 per ton for all sizes.

New Bedford, Mass.—By Water Board, for supplying pipe and castings, to U. S. Cast Iron Pipe & Foundry Co., Philadelphia, Pa., 3,660 tons straight pipe, \$79,239; 115 tons special castings, \$5,405; all rail delivery, \$84,644. Same part rail and part boat delivery, \$83,729. Other bids as follows: Donaldson Iron Co., Emans, Pa., straight pipe and special castings, \$89,161; R. D. Wood & Co., Philadelphia, Pa., straight pipe and special castings, \$94,144.50; Warren Foundry & Machine Co., New York, straight pipe and total castings, \$89,021.50; Standard Cast Iron Pipe & Foundry Co., Bristol, Pa., straight pipe and special castings, \$87,368. Three bids were received for 109 water valves from 2 to 36-in., and Board voted to award contract to Darling Pump & Manufacturing Co., Ltd., Williamsport, Pa., for \$8,835.05. The Chapman Valve Manufacturing Co., Indian Orchard, Mass., bid \$9,035.50 for the lot, and the Kennedy Valve Manufacturing Co., Elmira, N. Y., \$9,146.05.

Grand Rapids, Mich.—By Williamson & Crow, Gilbert Bldg., Grand Rapids, for South End Pumping Station for city, to Chas. Hoertz & Son, 189 W. Bridge st., for about \$10,000.

Negaunee, Mich.—By Council, for new steam pump for city water works station, to Prescott Co., of Milwaukee, Wis.

Bloomfield, N. J.—By Town Council, for cast iron pipe for use of Water Department, to Florence Iron Works, Philadelphia, Pa., for \$8,336.

Kearny, N. J.—By Town Council, to Van Keuren & Son, to lay water and sewer connections in Kearny ave., at \$1,866.

Bellevue, Neb.—To Tonkawa Construction Co., 3356 Baltimore st., Kansas City, Mo., for construction of system of water works for Bellevue. Oscar Keyser is Village Clerk.

Corning, N. Y.—By Board of Public Works, for construction of new pump of 3,000,000-gal. capacity for installation at Corning Water Works pumping station, to manufacturers of Gould pump at Seneca Falls. New pump will cost \$5,100.

Fargo, N. Dak.—To Haggart Contracting Co., for laying new water main on Second ave., north.

Hubbard, O.—By Village Council, for water works standpipe, to Petroleum Iron Works Co., at \$2,775.

Springfield, O.—To John J. McHugh, of Springfield, for construction of retaining wall at water works pumping station, for about \$5,652.

Aspinwall, Pa.—For construction of reservoir, to Michael Kruth, of Sharpsburg, Pa.

Chester, Pa.—For water and sewer connections, to John A. Morgan, as follows: Water connections, long, \$11; short, \$6; central, \$6. Blasted rock, per cu. yd., \$4.50.

Bethlehem, Pa.—For pipe for new municipal water system, to Donaldson Iron Co.

Preston, Utah.—By City, for installation of water system, to A. C. Bird & Co., of Salt Lake City, at \$57,827.

Bluefield, W. Va.—By City, to John Stenard, Huntington, W. Va., at \$15,175, to construct 54-in. concrete storm sewer through property of Hale Land Co., 2,946 ft., and vitrified sanitary sewer, 3,334 ft. long, from present sewer to Midway; Hale Land Co. will pay \$10,000 of cost. W. H. Campbell is engineer in charge.

Watertown, Wis.—To E. L. Bartlett, for building sub-station of Well No. 2, at \$815, and for connecting pumps at Well No. 1, \$870.

Edmonds, B. C.—For supplying about 174,000 ft. 3- to 10-in. lap-welded steel pipe for Burnaby water supply contract 12. from plans of Cleveland & Cameron, 506 Winch Bldg., Vancouver, and the contract has been awarded to Robertson-

Godson Co., of Vancouver, for total of \$51,527.

Oak Bay, B. C.—By Council, for supply of water pipe and specials, to Forsyth & Co., representing Robert McLaren & Sons, of Glasgow, for \$28,701. Other bidders included Evans, Coleman & Evans, \$28,862; Victoria Machinery Co., \$29,203; W. J. Winterburn, \$31,271; Canada Foundry Co., \$31,423; Robertson-Godson Co., \$36,867.

BIDS RECEIVED

Portland, Ore.—For water works supplies, opened on the 1st inst.: For 1,284 gate valves: Crane Co., Portland, Ore., \$16,432.50; M. L. Kline, Portland, Ore., \$18,710; Caldwell Machinery Co., Portland, Ore., \$18,956; the Gauld Co., Portland, Ore., \$19,019.50; Eddy Valve Co., Waterford, N. Y., \$19,655; Eddy Valve Co., Waterford, N. Y., \$20,260; Hoge & Swift, Portland, Ore., \$22,004; R. D. Wood & Co., by Crowe Co., Portland, \$22,249. For 129 sleeves and valves: M. L. Kline, \$3,011.35; Caldwell Machinery Co., \$3,761.35; Hoge & Swift, \$4,135.05; the A. P. Smith Mfg. Co., \$3,130.50. For steel standpipe: Willamette Iron & Steel Co., Portland, Ore., \$3,902.50; Standard Boiler Works, Portland, Ore., \$3,963.45; Des Moines Bridge & Iron Works, Des Moines, Ia., \$4,026.95; International Contract Co., Seattle, Wash., \$4,332.71; Glebisch & Joplin, Portland, Ore., \$4,695.62; E. W. Riner & Co., Portland, Ore., \$4,889.25; K. G. Lundstrom, Portland, Ore., \$5,129.50; Smith & Watson Iron Works, Portland, Ore., \$6,479.24. For lap-welded steel pipe: Crane Co., \$1,563.50; the Gauld Co., \$1,434.38; H. A. Hapner & Co., \$1,701; Fairbanks-Morse Co., Portland, Ore., \$2,475; Fairbanks-Morse Co., Portland, Ore., alternate, \$835; Zimmerman-Wells Brown Co., Portland, \$2,490; Zimmerman-Wells Brown Co., \$2,670. For wiring reservoirs: Specialty Equipment Co., Portland, Ore., \$1,597; M. J. Walsh Co., Portland, Ore., \$2,212; Standard Engineering Co., \$4,000; E. L. Knight & Co., \$2,200.

LIGHTING AND POWER

Helena, Ala.—It is said that this city will install electric light system, current to be purchased from McRae, Ala.

Los Angeles, Cal.—Steps will be taken at once by City Engineer's Department by order of Board of Public Works to prepare preliminary plans and data of all existing power distribution systems in city of Los Angeles. Work of preparing complete plans will cost about \$25,000, and to be done on request of E. F. Scattergood, chief engineer of Aqueduct Power Bureau.

Oxnard, Cal.—Citizens have authorized bond issue of \$130,000, of which \$30,000 will be used for installation of municipal lighting system.

Red Bluff, Cal.—Plans are being prepared for establishment of municipal electric light and power and water systems. Lighting system will cost \$146,000, and water system \$85,000. It is proposed to issue bonds.

Sisson, Cal.—People of Sisson have voted bond issue of \$40,000 for installation of light, water and sewer systems.

Winchester, Ind.—Citizens of Saratoga have started an agitation for electric lights.

Anthony, Ia.—Election will shortly be held to vote on issuing bonds for construction of electric light plant.

Pierson, Ia.—Citizens are said to have voted to bond town for \$4,500 for electric light plant.

Lynn, Mass.—It has been voted to install incandescent lights on various streets.

Detroit, Mich.—Plan is being considered for extension of lighting system.

Sumner, Miss.—Appropriation of \$22,500 is planned for electric lights, water works and sewer system.

Lyons, N. Y.—From present indications, people of Lyons will be given opportunity to vote on municipal electric lighting plant at time regular village budget is voted on in early part of May.

Newburgh, N. Y.—At joint meeting of Street Committee and Police and Light Committee of City Council, it was practically decided to report in favor of new illumination of Broadway.

Kernersville, N. C.—Electric light plant, cost \$5,000, will be built as decided on at an election.

Mayville, N. Dak.—City Council is said to be considering improvement of present electric light plant, or construction of new system.

Sharon, O.—Date for voting on proposed bond issue of \$85,000 for purpose of erecting municipal electric light plant has been changed from Saturday to Tuesday, May 21.

Portland, Ore.—To compete with Portland Railway, Light & Power Co., the

Northwest Electric Co. is seeking franchise from Council to install an immense light and power system in this city.

Ponca, Okla.—City will construct electric light plant, for which \$30,000 of bonds have been voted. Will shortly advertise for bids.

Sultan, Wash.—F. I. Anderson is said to have secured franchise for electric light plant.

CONTRACT AWARDED

Indianapolis, Ind.—By City, for lighting Fall Creek blvd., to Citizens Gas Co., at \$2 per month per light. Under bid, company proposes to furnish 60 candlepower Welsbach light of 120 candlepower light of Graetzin type.

Falmouth, Ky.—To Frazer & Burk, Lexington, Ky., for installation of small electric light equipment at Falmouth.

Wheeling, W. Va.—To Gee Electric Co., of Wheeling, for furnishing incandescent lights for this city for coming year.

FIRE EQUIPMENT

Folsom, Cal.—Property owners of Folsom, Sacramento County, have voted special tax for purpose of acquiring fire equipment for protection of property in town.

San Pedro, Cal.—Harbor Commissioner H. A. Maloy is seeking data regarding a first-class fire boat in the city.

Bridgeport, Conn.—Fire Department has been authorized to buy 250 ft. of hose.

Nagautuck, Conn.—In his annual report Chief Clark asks for an auto chemical and pumping engine and a chief's car.

Thomasville, Ga.—County Commissioners will purchase traction engine.

Bangor, Me.—Fire Department will buy 3,000 ft. of hose.

Beardstown, Ill.—New fire truck will probably be purchased by Fire Department.

Marion, Ind.—Finance Committee has reported favorably on appropriation of \$1,000 for purchase of fire hose.

Newcastle, Ind.—Purchase of auto fire truck is being considered for station on 18th st. and Avenue A.

Marshalltown, Kan.—Purchase of auto fire engine is being considered by City Council.

Shreveport, La.—Bids will be received until May 14 by L. H. Baker, Secretary-Treasurer, for purchase of 2,000 ft. 2½-in. fire hose; one auto combination chemical and hose wagon; two auto combination pumping engines and hose wagons, and various other equipment for Fire Department.

Augusta, Me.—Purchase of 1,000 ft. of new hose has been authorized.

Braintree, Mass.—Purchase of motor fire engine is under consideration.

Cambridge, Mass.—Appropriation of \$70,000 is being discussed for proposed fire department headquarters.

Huntington, Mass.—Meeting will shortly be held to discuss appropriation for purchase of new fire apparatus and hose.

Milford, Mass.—Purchase of new hose has been authorized to cost \$1,000.

Webster, Mass.—Purchase of new hook and ladder truck is being discussed.

Dowagiac, Mich.—Local department may purchase auto fire engine.

Red Wing, Minn.—Purchase of 1,200 ft. of fire hose has been authorized. A. N. Cook is chief.

Springfield, Mo.—Bids will be received by the City Clerk of Springfield, Mo., at his office in the City Hall at or before 9 o'clock a.m., on May 7, for purchase of bonds issued by said city, as follows: Fifty thousand dollars of Fire Department bonds. J. H. Langston, City Clerk.

Keyport, N. J.—Eagle Hose Co. No. 4, of this place, is planning to build new and up-to-date fire house on property in Broadway.

Auburn, N. Y.—Mayor O'Neill has recommended the installation of motor fire apparatus.

Port Jervis, N. Y.—Five hundred feet of fire hose may be purchased.

Syracuse, N. Y.—Bids will shortly be submitted for furnishing new combination chemical engine and hose wagon for fire company located in 13th Ward.

Yonkers, N. Y.—Architect Wm. P. Katz has been instructed to prepare plans for combined fire and police station at Saratoga ave. and Radford st.

Cincinnati, O.—City expects to spend upward of \$250,000 for fire-fighting apparatus.

Cleveland, O.—Bids will be received at office of City Auditor Thomas Coughlin until 12 noon, May 10, for purchase of \$45,000 fire department coupon bonds.

Columbus, O.—Bond issue of \$50,000 has been authorized by City Council for new fire apparatus.

Dayton, O.—Council has authorized issue of \$25,000 bonds for purchase of auto fire apparatus and police motorcycles.

Tulsa, Okla.—Sum of \$50,000 has been

appropriated for Fire Department improvements.

Greensburg, Pa.—Purchase of 500 ft. of new hose has been requested by Fire Department.

Johnston, Pa.—Triplicate auto engine will probably be purchased shortly.

West Middlesex, Pa.—Local department will purchase 500 ft. of new hose.

York, Pa.—Erection of \$5,000 brick fire engine house for use of Eagle Hose and Chemical Co., No. 7, is provided by city ordinance signed by Mayor Lefean.

Dallas, Tex.—Purchase of auto hook and ladder truck has been authorized. Fire Chief H. Frank Magee.

Denison, Tex.—Commissioners of Abilene have ordered election to be held May 6, to determine issuance of bonds to amount of \$17,000 to be used for purchasing additional fire equipments and for building of crematory.

Rutland, Vt.—Purchase of combination chemical and hose wagon is being considered.

Green Bay, Wis.—Resolution has been passed for purchase of 500 ft. of hose.

Racine, Wis.—City will purchase two or three motor fire engines.

Welland, Ont., Can.—Purchase of new hose wagon has been authorized by City Council.

CONTRACTS AWARDED

Los Angeles, Cal.—By City, for furnishing fire hose as follows: Hudson Mechanical Rubber Co., 1,000 ft., at \$1 per ft.; Eureka Fire Hose Mfg. Co., 1,000 ft., at \$1 per ft.

Sacramento, Cal.—To Gamewell Fire Alarm & Telegraph Co., of New York, for placing fire alarm system of city underground, at cost of \$56,406, by City Trustees.

Hammond, Ind.—By City, for 2,000 ft. of fire hose, to Bi-Lateral Fire Hose Co., of Chicago, Ill.

Perth Amboy, N. J.—By Common Council, for hook and ladder truck, to Combination Ladder Co., of Providence, R. I., at \$1,132.

Rochester, N. Y.—For constructing new fire house to be erected at southwest corner of Frank and Platt sts., to A. Friedrich & Sons Co. Bids received were: Fred Gleason, \$18,545; George B. Garrison, \$18,378; A. W. Hopeman & Sons Co., \$17,278; A. Friedrich & Sons Co., \$17,242; F. H. Rapp & Co., \$17,990; Leo J. Held, \$17,735.

Charleston, S. C.—By Board of Firemasters, for building 80 horsepower combination chemical engine and tractor for Charleston Fire Department, to Seagrave Co., of Columbus, O.

Richmond, Va.—To Knox Automobile Co., for furnishing city with combination motor fire engine; also for chief's car.

BIDS RECEIVED

San Francisco, Cal.—For motor apparatus, as follows: For two tractors or motor chassis: the White Co., \$6,800; Couple Gear Freight Wheel Co., \$8,835; the Seagrave Co., \$6,943. Motor-driven hose wagons: The White Co., \$7,281; the Seagrave Co., \$6,943. Motor-driven hose tenders: The White Co., \$8,420; the Seagrave Co., \$7,906.

New York, N. Y.—For furnishing fire apparatus, as follows: For furnishing and delivering 26 motor-driven combination chemical and hose wagons: The White Co., Broadway at 62d st., \$138,606; the Rainier & Lineburg Co., 1880 Broadway, \$96,122; Webb Motor Fire Apparatus Co., St. Louis, Mo., \$123,500; Knox Automobile Co., 1966 Broadway, \$116,803; Robinson Fire Apparatus Mfg. Co., 141 Broadway, \$108,628; the Seagrave Co., Columbus, O., \$123,474; International Motor Co., 1764 Broadway, \$102,570; American-La France Fire Engine Co., Elmira, N. Y., \$108,940. For furnishing and delivering three motor-driven hose wagons for the high pressure service: The White Co., Broadway at 62d st., \$15,357; Webb Motor Fire Apparatus Co., St. Louis, Mo., \$15,750; the Rainier & Lineburg Co., 1880 Broadway, \$14,220; the Seagrave Co., Columbus, O., \$14,955; Knox Automobile Co., 1966 Broadway, \$14,817; International Motor Co., 1764 Broadway, \$14,625. For furnishing and delivering two motor-driven hose wagons: The White Co., Broadway at 62d st., \$10,166; Webb Motor Fire Apparatus Co., St. Louis, Mo., \$9,000; the Rainier & Lineburg Co., 1880 Broadway, \$9,480; the Seagrave Co., Columbus, O., \$9,130; International Motor Co., 1764 Broadway, \$8,326; American-La France Fire Engine Co., Elmira, N. Y., \$9,485; Knox Automobile Co., 1966 Broadway, \$9,214.

BRIDGES

Jersey City, N. J.—Bids will be received by Board of Chosen Freeholders of County of Hudson, at Court House, until 3 p.m., May 2, for purchase of \$125,000 new 14th

st. viaduct bonds. Walter O'Mara, Clerk.

Long Branch, N. J.—Erection of concrete structure to span Takanasee Lake is being considered; cost is estimated at \$30,000.

Jersey City, N. J.—Bids will be received until 3 p.m., May 2, by Board of Chosen Freeholders, for purchase of \$125,000 new 14th st. viaduct bonds, and \$100,000 Bridge st. bridge bonds. Walter O'Mara, Clerk.

Ocean City, N. J.—Erection of auto and wagon bridge to Somer's Point is being discussed.

Perth Amboy, N. J.—Members of County Board of Freeholders have instructed County Engineer Alvin Pax to secure data relative to bridge over Woodbridge Creek.

Yonkers, N. Y.—Plans are being made for repairing Front ave. and De Witt ave. bridges; estimated cost, \$9,000 each.

Syracuse, N. Y.—Efforts of Onondaga and Oswego county officials are being directed toward early construction of new bridge at Phoenix to take place of old structure, which was built nearly 70 years ago; estimated cost, \$130,000.

Dayton, O.—Sum of \$65,000 has been appropriated for new bridge at Keowee st., and it is claimed that about \$15,000 added to this will enable construction of bridge that is similar to other concrete arch bridges, and that, it is believed, will endure for almost indefinite period.

Urbana, O.—Ordinance has been passed directing engineer to prepare plans for concrete bridge over creek near Pan Handle station in Miami st.

Portland, Ore.—Bids have been invited by County Court for construction of new steel bridge across Sandy River at Troutdale, and contract probably will be let latter part of month. Structure will cost county between \$20,000 and \$25,000, and will replace long timber span condemned two months ago. While bridge is under construction ferry will be operated.

Altoona, Pa.—City Engineer will shortly advertise for bids for erection of new bridge at Seventh st.

Strool, S. Dak.—Strool has secured location of new bridge across Grand River in that county, authorized by County Commissioners.

Abilene, Tex.—Commissioners' Court has ordered two more steel bridges to be built at once. One is to be built over Cedar Creek about two miles northeast of here, and one over Elm Creek on Abilene-Tye rd.

El Paso, Tex.—Bonds in sum of \$7,000 for construction of bridges at Montoya and Vinton, Tex., have been carried at bond election held at Canutillo.

Salt Lake City, Utah.—Ordinance providing specifications for 48-ft. steel or concrete viaduct in Seventh South, between Fifth and Sixth West sts over tracks of Denver & Rio Grande Railroad, has been about completed by C. S. Varian, Corporation Counsel, and will be presented to Commission.

Petersburg, Va.—County Engineer W. W. LaPrade has called for bids for construction of two bridges, one to be built over Swift Creek, at Newby rd., and other to cross Swift Creek at New Bridge rd. in Chesterfield.

Everett, Wash.—County Engineer J. F. Birney has been directed by County Commissioners to draw plans for street drawbridge to span Ebey Slough; estimated cost, \$22,000 to \$25,000.

CONTRACTS AWARDED

San Bernardino, Cal.—By County, for constructing 250-ft. steel highway span, to Joliet Bridge & Iron Co., of Joliet, Ill., for \$11,620.

Hillrose, Col.—By Board of Commissioners of Morgan County, to Missouri Valley Bridge & Iron Co., Leavenworth, Kan., for construction of steel bridge across Beaver Creek.

Jacksonville, Fla.—For constructing bridge 526 ft. long over Front Creek on Lem Turner rd., to Edwards Construction Co., of Tampa, for \$15,757.

Virginia, Ill.—To Walter Blake, Appleton, Wis., for construction of \$6,000 reinforced concrete bridge.

Boonville, Ind.—By Warrick County Board of Commissioners, for construction of 36 steel bridges, Vincennes, Ind., at \$20,695, and four bridge repairs, at \$848, to Vincennes Bridge Co.

Kokomo, Ind.—By Board of Commissioners of Howard County, to J. E. Smith, Richmond, Ind., at \$3,790, for construction of two-span reinforced concrete bridge over Wildcat Creek in Union Township.

Princeton, Ind.—By Gibson County Board of Commissioners, for three steel bridges, ranging from 28 ft. to 45 ft. spans, to George Soller, 526 Main st.

Marshalltown, Ia.—By Board of Supervisors of Marshall County, to Capital City Construction Co., Des Moines, at

\$17,800, for construction of four 70-ft. girder bridges and one 180-ft. arch bridge.

Bay City, Mich.—For concrete work on Grand Trunk bridge, to Geo. B. Swift & Co., of Chicago, Ill. Bridge will be 1,300 ft. long and contain eight concrete piers.

Batesville, Miss.—By Board of Supervisors of Panola County, to Memphis Bridge Co., Memphis, Tenn., for construction of three steel bridges.

Biloxi, Miss.—For building of Chum-bula bridge across Biloxi River at Cowart's ferry, to Austin Bros., of Atlanta, for \$5,095, and to W. P. Breland, at \$1,540, for building of Landon bridge across Bayou Bernard.

De Soto, Mo.—By City Council, to Otto Herman, at \$1,498.35, for construction of overhead reinforced concrete beam bridge.

Poughkeepsie, N. Y.—By Board of Public Works, for constructing steel and concrete bridge over Fallkill at Clinton sq., to Chas. Mitchell, for \$5,161.

Bowling Green, O.—By Board of Commissioners of Wood County, to Wood County Stone & Construction Co., for construction of two bridges, at \$1,896.32 and \$2,123.25, respectively.

Celina, O.—By Board of Commissioners of Mercer County, to Brookville Bridge Co., at \$6,158.50, for construction of six steel bridges.

Lisboa, O.—By County Commissioners, for super-structure at bridge 917 in Elk-run Township, to Central Concrete & Construction Co., of Canton, on their bid of \$1,850. William McClain for sub-structure at same site, for \$1,623.75. Central Concrete & Construction Co. also secured contract for super-structure at bridge site 1,041 in Middleton Township, for \$1,376.50. Contract for concrete abutments at same site went to Richardson & Bretz on their bid of \$1,367.

Norwalk, O.—By Board of Commissioners of Huron County, to Riley Hardo, at \$1,256, for construction of Kluding bridge substructure, in Bronson Township.

Avondale, Pa.—By Commissioners of Chester County, to D. E. O'Connell & Son, of Londongrove Township, for erection of new stone bridge over White Clay Creek, Avondale, for \$2,399.50.

Rapid City, S. Dak.—For constructing two viaducts, to Hennepin Bridge Co., of Minneapolis, Minn., for \$43,000.

Dallas, Tex.—By City Commissioners, for construction of concrete bridge or culvert over Peak Branch at Exposition and Parry aves., to E. T. Davis and C. M. Davis, at \$6,850.

Port Arthur, Tex.—To Spence Howe Construction Co., for constructing bascule bridge over canal, for \$29,300.

Seguin, Tex.—By Commissioners' Court, for constructing bridge 173 ft. long over Guadalupe River, at Miller bridge to Missouri Valley Bridge & Iron Co., of Leavenworth, Kan., for \$6,400.

Colon, Panama.—To Penn Bridge Co.,

Beaver Falls, Pa., for 106 ft. steel single track railway bridge for Panama R. R. Co.

Montesano, Wash.—By Board of Commissioners of Chehalis County, to Creech & Walker, at \$2,210, for construction of ferry slips, highway and trestle for south side road.

MISCELLANEOUS

Los Angeles, Cal.—Arroyo Seco parkway plan has been approved by Streets and Boulevards Committee of City Council and will be reported to Council. Plan is for six-mile boulevard with parkings on each side, and costing more than \$1,000,000. Parkway will start at Elysian Park and extend six miles. It will vary from 300 to 1,200 ft. in width.

Pasadena, Cal.—Specifications for incinerator are practically ready.

Riverside, Cal.—It is proposed to issue bonds for \$75,000 for building of City Hall at Orange and Seventh sts.

Bristol, Conn.—City Clerk Thomas B. Steele is advertising for quotations and samples of street signs.

Wilmington, Del.—City Council has received from Park Commission recommendation that Council acquire piece of ground at Second and West sts. for park purposes.

Atlanta, Ga.—Council will be asked to submit to people issuance of \$2,000,000 worth of park bonds to be divided as follows: Grant Park, \$150,000; Piedmont Park, \$200,000; Lakewood Park, \$200,000; Maddox Park, \$125,000; Mims Park, \$10,000; Joyner Park, \$20,000; Springvale Park, \$5,000; Oakland City Park, \$20,000; enlarging Gress Zoo, \$100,000; buying park in First Ward, \$50,000; two in Second Ward, \$100,000; one in Third, \$50,000; two in Fourth Ward, \$100,000; one in Fifth Ward, \$50,000; one in Sixth Ward, \$100,000; one in Seventh Ward, \$25,000; one in Ninth Ward, \$50,000; one in 10th Ward, \$25,000; improving small parks in Eighth Ward, \$25,000; buying 12 plots for playgrounds to be equally distributed throughout city, \$300,000; equipping and developing small parks and playgrounds, \$300,000.

Marion, Ind.—Finance Committee has reported favorably on appropriation of \$1,200 for erection of building for police patrol.

Newaygo, Mich.—Board of Supervisors at White Cloud has passed resolution to submit bonding proposition next spring for \$10,000 to build new jail and sheriff's residence.

Saint Paul, Minn.—City Engineer Clausen has submitted a report to the Harbor Commission on the proposed location of the new river channel; estimated cost, \$2,192,331.

Great Falls, Mont.—Commissioners of

this county have taken first steps in construction of \$10,000 jail.

Irvington, N. J.—Resolution has been adopted by Irvington Town Council favoring erection of police station.

Hornell, N. Y.—Eugene Porter, State Commissioner of Health, has sent emergency communication to Common Council stating that city must make provisions at once for building of garbage disposal plant. It is stated that garbage disposal plant will cost at least \$120,000.

New York City, N. Y.—Bids will be received until 2 p.m., May 7, by Controller Prendergast, at 280 Broadway, New York, for purchase of bonds amounting to \$65,000,000, of which \$25,000,000 is for various municipal improvements, \$20,000,000 for water and \$20,000,000 for rapid transit.

Syracuse, N. Y.—Ordinance authorizing purchase for \$2,000 of automobile for Commissioner of Public Works has been approved.

Winston-Salem, N. C.—It has been announced that work of preparing plans for new hall would be commenced at once. Building proposed will cost not less than \$8,000, will be constructed of brick, two stories and will stand about 60 x 70 ft.

Cleveland, O.—Bond issue of \$1,000,000 for playgrounds is being discussed.

Cleveland, O.—Bids will be received at office of City Auditor until 12 noon, May 10, for purchase of \$350,000 park coupon bonds; \$125,000 infirmary and hospital coupon bonds; \$75,000 house of correction coupon bonds; \$25,000 market house coupon bonds, and \$30,000 police department coupon bonds. John Krause, City Treasurer.

Toledo, O.—Mayor Whitlock urges erection of city hall building to cost about \$1,000,000.

Nashville, Tenn.—First steps have been taken for securing two new libraries for city.

El Paso, Tex.—Election for \$10,000 in bonds for protection of valley lands between Washington Park and Ysleta from water of Rio Grande has been carried.

Hampton, Va.—Finance Committee of Hampton City Council has decided to recommend to Council appropriation of \$1,500 for establishment of garbage system in city.

Richmond, Va.—Approval of purchase of Richmond Dock, at agreed price of \$90,000, has been given by Mayor Richardson.

Rosalie, Wash.—Election will be called for May 28 to vote on municipal bonds in sum of \$15,000, according to ordinance that passed second reading at City Council meeting. Of this sum, \$9,000 is to be used in buying of site and erection of city hall which can be used for auditorium.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Indiana.....	Evansville.....	Apr. 27, 10 a.m.....	Pavg. with brick, asphalt, bitulithic or wood.....	S. A. Bartholome, Clk. Bd. Pb. Wks.
Pennsylvania.....	Sewickley.....	Apr. 29, 4 p.m.....	Pavg. with vitrified brick and tarvia.....	M. M. Baker, Engr.
Connecticut.....	Hartford.....	Apr. 29, 11 a.m.....	Furn. and setting curved curbing.....	Board of Contract.
Kentucky.....	Louisville.....	Apr. 30, 2 p.m.....	Resurfacing with asphalt.....	J. D. Wakefield, Chm. Bd. Pub. Wks.
New York.....	Brooklyn.....	May 1, 11 a.m.....	Imp. and pavg. with asphalt and granite.....	A. E. Steers, Boro. Pres.
Pennsylvania.....	Franklin.....	May 1.....	Constrn. 20,000 yds. brick paving.....	J. M. Snow, City Engr.
New York.....	New York.....	May 2, 3 p.m.....	Constrn. cement walks and laying asphalt.....	C. B. Stover, Pres. Park Bd.
New York.....	Mount Kisco.....	May 2.....	Macad. 2 streets.....	Village Pres.
Ohio.....	Toledo.....	May 4, noon.....	Pavg. with vitrified brick.....	F. G. Stockton, Sec'y Dir. Pb. Serv.
New York.....	Peekskill.....	May 4.....	Imp. road.....	Town Clerk.
Georgia.....	Augusta.....	May 7, 4 p.m.....	Constrn. 30,000 yds. paving.....	Nisbett Wingfield, Comm. Pub. Wks.
Pennsylvania.....	Olyphant.....	May 7, 6 p.m.....	Constrn. brick pav't and stone curbing.....	J. F. Cannan, Boro. Sec'y.
New York.....	Buffalo.....	May 7, 11 a.m.....	Repavg. several streets.....	F. G. Ward, Comm. Pub. Wks.
Iowa.....	Clinton.....	May 14.....	Pavg. Fifth avenue.....	City Council.
SEWERAGE				
Oklahoma.....	Muskogee.....	Apr. 30, 10 a.m.....	Constrn. number of sewers.....	Chas. Wheeler, Jr., City Clk.
WATER SUPPLY				
New Jersey.....	Perth Amboy.....	May 1, 8.30 p.m.....	Furn. 540 tons 24-in. c. i. pipe and specials.....	S. J. Mason, Engr.
LIGHTING AND POWER				
Ohio.....	Bryan.....	May 7, noon.....	Furn. 250-h.p. crude oil engine, generator, etc.....	G. F. Solier, Pres. Trustees.
FIRE EQUIPMENT				
New York.....	New Rochelle.....	May 7, 8 p.m.....	Furn. auto fire apparatus.....	Board Fire Comm.
BRIDGES				
Pennsylvania.....	Reading.....	May 6, 10 a.m.....	Repair. masonry bridge.....	D. K. Hoch, County Compt.
Oklahoma.....	Chandler.....	May 7.....	Constrn. 42 steel and concrete bridges; cost, \$82,000.....	County Auditor.
MISCELLANEOUS				
Illinois.....	Vienna.....	Apr. 30, noon.....	Alter. and repairing court house.....	J. L. Thornton, Chm. County Comm.
Texas.....	Dallas.....	July 15, 2 p.m.....	Constrn. city hall; cost, \$400,000.....	City Commissioners.

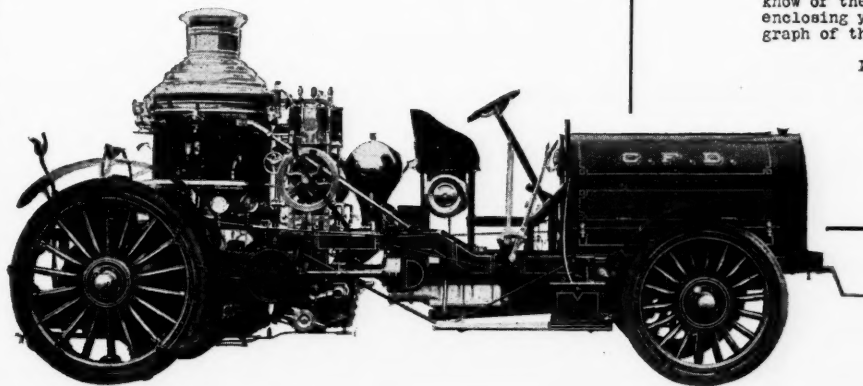
Goodrich Wireless Tires

ON

Motor Fire Engine

driven at the rate of 37½ miles an hour.

READ THIS LETTER



Nott Fire Engine Co.

S. NOTT, PRESIDENT
H. GEORGE, VICE-PRES.
H. POWELL, CLERK
H. GOLDSBOROUGH, TREAS.
J. WILKINSON, MANAGER OF SALES
C. FENNEY, SUPERVISOR OF CONSTRUCTION

MANUFACTURERS OF
STEAM FIRE ENGINES
CHEMICAL ENGINES, COMBINATION HOSE WAGONS,
HOSE CARTS & SUPPLIES
Minneapolis, Minn.

March 5, 1912.

B. F. Goodrich Company,
Tire Dept.,
Akron, Ohio.

Gentlemen:-

I acknowledge receipt of your letter of March 1st. I have just returned from the City of Chicago where I delivered to them a steam fire engine, motor propelled, that weighs a little over 9 ton loaded, and I drove this machine 25 miles in and around Chicago in one day's demonstration. I also drove it at a speed of 37½ miles an hour down Michigan Ave. Everyone was exceptionally well pleased.

This engine is equipped with your tires and I thought it would interest you to know of the performance of same. I am also enclosing you under separate cover a photograph of the engine, with my compliments.

I am,

Very truly yours,

NOTT FIRE ENGINE CO.,

S. Nott
General Manager.

The
B. F. Goodrich Co.
AKRON, OHIO
LARGEST IN THE WORLD

"Most Miles per Dollar"
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FIRE ALARM TELEGRAPH APPARATUS

We build apparatus best suited to the individual needs of cities or villages.

Complete systems installed or instruments furnished for extending any standard system.
STAR ELECTRIC COMPANY, BINGHAMTON, N. Y.

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Always gives satisfaction. Send for catalog

Eureka Fire Hose Manufacturing Co.

New York, N. Y.; Boston, Mass.; Chicago, Ill.; Philadelphia, Pa.;
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Strength of Four.

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UNITED STATES TIRE CO.
NEW YORK

Dealers Everywhere

STREET IMPROVEMENTS

Manchester, Conn.—It is estimated that Highway Department will have more than 2,500 ft. of curb stone to lay this summer.

Tampa, Fla.—Board of Public Works will advertise for 2,000,000 brick, to be delivered at rate of 200,000 per month, 20,000 lineal ft. of granite curbing, to be delivered at rate of 5,000 ft. every 30 days.

Indianapolis, Ind.—Plans are being discussed for permanent improvement of Indiana ave., from White River to Crawfordsville rd.

Des Moines, Ia.—It has been voted to use every effort to get paving on East Ninth st. extended from Washington ave. to Hull ave., or what is known as Grandview addition.

Barbourville, Ky.—Number of southeastern Kentucky counties will probably take vote on issuance of road bonds this summer. In Bell County steps will be taken shortly to call for vote on question and several other counties are planning to hold elections.

Louisville, Ky.—Plan to bring about extension of 45th st., formerly known as Shawnee Terrace, north from Chestnut st. to point on line with southeast corner of Fontaine Ferry Park, and thence west to Western Parkway, was offered by Ben J. Brumleve at regular meeting of Board of Park Commissioners.

Louisville, Ky.—Piscataway Court by resolution has ordered contract to be let for widening Workhouse rd. for distance of about quarter of mile near Cherokee Park. Cost will be about \$3,500.

Boston, Mass.—Resolution authorizing bond issue of \$32,500 for street paving and brick sidewalks, sewerage, etc., has been adopted by Council.

Boston, Mass.—Council has passed on final reading appropriating by loan \$300,000 for making new streets.

Morristown, Tenn.—Paving of Morristown's business section is now assured fact. Work of paving this district, which will cover about 2,200 lineal ft. or seven blocks, will begin soon. District to be paved is Main st., from Hill st. to Mill st.

Bristol, Va.—Sullivan County has appropriated total of \$500,000 for good roads.

Fredericksburg, Va.—Election in Stafford County on question of issuing bonds to amount of \$100,000 for permanent improvements of public roads of Stafford, has resulted in favor of bond issue by majority of 140.

CONTRACTS AWARDED

Elkhart, Ind.—To Smith, Douglas & Witt, of Goshen, Ind., to do cement and concrete paving on St. Joseph st. General contract is held by Northern Indiana Construction Co., of Elkhart.

Muncie, Ind.—By Board of Commissioners of Delaware County, to Curtis V. Rector, city, for construction of Rector rd.

Corning, Ia.—To Dunnehan & Hamilton, by City Council, for laying of brick pavement, at about \$39,000.

Lexington, Ky.—Carey-Reed Co. will probably be awarded contract for construction of asphalt paving on Vine st., from Limestone to Merino, at following bid: Limestone curb, 60 cts. per lineal ft.; granite curb, \$1.10, and concrete curb, 40 cts.

Laporte City, La.—By Town, for constructing 6,100 sq. yds. brick paving, to J. W. Turner Improvement Co., of Des Moines, at \$1.98 per sq. yd.

New Orleans, La.—To Howard Engleston, 1210 Hibernia Bank Bldg., New Orleans, at \$52,413, for building main public highway from New Iberia to Heanentette, Iberia Parish.

Newton, La.—By City Council, for paving 1,000 yds. with concrete, to G. Manicini, of Florence, Neb., at \$1.18 per sq. ft. M. King Construction Co., Des Moines, received curbing contract at 27 cts. per ft.

Grand Rapids, Mich.—To Harry Vander Veen, 616 Ashton Bldg., Grand Rapids, for construction of 13,000 sq. yds. of asphaltic concrete on 5-in. cement concrete foundation, and 6,000 lin. ft. of curb and gutter, at \$1.25 per sq. yd.

Syracuse, N. Y.—To Warner-Quinlan Co., at \$28,755, for resurfacing streets.

Memphis, Tenn.—To Memphis Asphalt & Paving Co., for improvement of Fourth st., between Union and Court aves., at \$7,122.

BIDS RECEIVED

Albany, N. Y.—Following are lowest bids received April 17 by State Commissioner of Highways for improvement of public highways by State aid: Rd. No. 979, Feura Bush-Indian Fields, Albany County, 8.27 miles, Herlihy Contracting Co., Glens Falls, \$81,406.15. Rd. No. 1013, Plymouth-Hamlet, Chenango County, 0.19 miles, E. D. Baker, Binghamton, \$3,050.80. Rd. No. 5216, Bainbridge-Unadilla, Chen-

ango County, 1.07 miles, Newport Construction Co., Herkimer, \$13,484.68. Rd. No. 1013, Sinclairville-Cassadaga, Part 2, Chautauqua County, 3.30 miles, Kerwin Construction Co., Albany, \$48,939.70. Rd. No. 5217, Jamestown-Bemis Point, Chautauqua County, 7.96 miles, Erie Contracting Co., Buffalo, \$156,313.13. Rd. No. 960, Rutledge-Leon, Cattaraugus County, 2.80 miles, Frank L. Cohen, Buffalo, \$37,353.40. Rd. No. 996, Cortland-Croton, Part 2, Cortland County, 2.25 miles, M. D. Windsor, Guilford, \$20,608.15. Rd. No. 5218, Lowman-Waverly, Part 2, Chemung County, 4.27 miles, Coughlin & Lowman, Watkins, \$40,064.50. Rd. No. 5172, Niagara Falls-Buffalo, Part 4, Erie County, 2.92 miles, Erie Contracting Co., Buffalo, \$64,982.66. Rd. No. 990, Angola Village, Erie County, 1.03 miles, Hurley & Lyne, Fredonia, \$33,593.50. Rd. No. 5166, Saugerties-Catskill, Part 2, Greene County, 3.87 miles, Russo & Parker, Hudson, \$46,582.80. Rd. No. 467, Newport-Norway-Cold Brook, Herkimer County, 6.92 miles, Newport Construction Co., Newport, N. Y., \$74,827.60. Rd. No. 5219, Ilion-Frankfort, Herkimer County, 2.47 miles, Albert Musso, Frankfort, \$98,040.70. Rd. No. 575, Rush-Honeoye Falls, Monroe County, 4.08 miles, Monroe Roads Co., Pittsford, \$41,811.45. Rd. No. 574, Fairport-Nine Mile Point, Monroe County, 11.41 miles, Julius Frederick, Rochester, \$199,159.25. Rd. No. 988, New Hyde Park-Great Neck, Nassau County, 0.35 miles, W. J. Cashman, Roseton, \$4,379. Rd. No. 5220, Niagara Falls-Buffalo, Niagara County, 4.87 miles, Frank L. Cohen, Buffalo, \$105,148.03. Rd. No. 5131, Rome City, Oneida County, 1.20 miles, Warren Bros., Boston, Mass., \$44,631.50. Rd. No. 5221, Union Square Pulaski, Part 2, Oswego County, 4.69 miles, Semper Bros., Watertown, \$57,922.25. Rd. No. 981, De Freestville-Couse, Rensselaer County, 3.14 miles, Arnold & Sherrill, Albany, \$34,469.88. Rd. No. 5222, Cropseyville-Crafton, Rensselaer County, 5.93 miles, Snead & Wilson, Brown's Station, \$68,790.95. Rd. No. 966, Madrid-Waddington, Part 2, St. Lawrence County, 4.04 miles, Burns Bros. & Haley, Watertown, \$35,802.50. Rd. No. 992, Montour Falls-Alpine, Part 2, Schuyler County, 6.68 miles, Coughlin & Lowman, Watkins, \$65,562.30. Rd. No. 5195, Vrooman-Howes Cave, Schoharie County, 5.05 miles, Aetna Engineering & Contracting Co., Herkimer, N. Y., \$101,688.65. Rd. No. 5223, Liberty-County Line, Part 1, Sullivan County, 8.54 miles, Merritt Construction Co., Hunkahoe, \$124,849.50. Rd. No. 5224, Campbell-Bath, Steuben County, 9.43 miles, Shaughnessy Construction Co., Albany, \$71,709. Rd. No. 1001, Enfield Center-Ithaca, Tompkins County, 6.45 miles, Patrick Connelly, Ithaca, \$57,337.50. Rd. No. 5225, Varna Crossing, Tompkins County, 0.53 miles, Joseph McCormack, E. Providence, R. I., \$12,889.50. Rd. No. 351, Highland-Gardiner, Part 2, Ulster County, 7.80 miles, De Graff & Hogeboom, Kingston, \$70,932.30. Rd. No. 5226, White Plains-Rye Lake, Part 2, Westchester County, 7.01 miles, Wm. P. McDonald Co., Mt. Vernon, \$79,323.65. Rd. No. 993, Manchester-Palmira, Part 2, Wayne County, 1.20 miles, Monroe Road Co., Pittsford, \$10,179.70. Highway No. 5210, Orange County, Middletown-Bloomingtonburg, 6 1/2 miles of Rocmac pavement, Jackson Brothers, Cuddebackville, \$72,965.10. Highway No. 5176, Orange and Ulster Counties, Marlborough-Cedar Hill Cemetery, 2 1/6 miles of Rocmac pavement, Java & Kehoe, Inc., Newburgh, \$35,780.10.

SEWERAGE

Boston, Mass.—Resolution authorizing bond issue of \$32,500 for sewerage, surface drainage, street paving and brick sidewalks, has been adopted by Council.

Boston, Mass.—Council has passed on final reading appropriating by loan \$175,000 for sewer improvements in south end, and \$150,000 for other sewer works.

Middlenort, N. Y.—Sewer plans and specifications have been approved at Albany. They call for expenditure of about \$35,000.

Erie, Pa.—Plans for sewer system in Land Light House Park are now being considered. This system will be so devised as to give connections to every lot in the tract. It is the intention to begin work on the sewer system at once.

CONTRACTS AWARDED

Mound City, Mo.—To Skilbred Construction Co., 1112 Olive st., St. Louis, at \$4,300, for construction of sanitary sewer for Mound City.

Lorain, O.—By Director of Public Service, to M. J. Burke, 124 E. 21st st., for construction of sanitary sewers.

St. Bernard, O.—By Director of Public

Service, to John Dempey, Carthage ave., Norwood, O., for construction of 8-in. vitrified pipe sewer in Langley ave., from Mitchell to Delmar ave. Henry A. Numlist is City Engineer.

Sebring, O.—To P. Horn & Son, Canton, O., for constructing two miles of sewers for Sebring.

WATER SUPPLY

Haleyville, Ala.—Construction of water works system is being considered. M. S. Drewrey is City Clerk.

San Bernardino, Cal.—The National Home and Town Builders have let to city of San Bernardino contract to install water system at cost of about \$4,000, on its Highland Heights tract at San Bernardino. Company is now building homes on tract, which is one of scenic places between San Bernardino and Arrowhead Springs.

Columbus, Ga.—Sum of \$450,000 will be expended in improvements to water works, including pumping station, reservoir, filter plant, etc.

Macon, Ga.—At regular meeting of Water Board Commissioners ordered pump of 7,000,000-gal. capacity.

Valdosta, Ga.—Bond issue of \$40,000 is being considered for extension of water works.

Fort Dodge, Ia.—Council is considering advisability of installing reservoir.

Fort Dodge, Ia.—Resolutions have been adopted for laying of water mains in various streets.

Independence, Kan.—Bond issue of \$100,000 is said to be voted for improvements to water works.

Covington, La.—Taxpayers will vote on \$60,000 bond issue for water works on May 14.

Greensboro, Md.—Water works system will be constructed.

Nashville, Tenn.—Plans for laying in Nashville of six miles of water mains have been made by Superintendent Ryer of Water Works Department and Board of Public Works, and contracts for work will shortly be let. In all 30 mains are to be extended and it is estimated that new mains will reach at least 1,200 houses now without city water, and serve at least 6,000 people.

Wortham, Tex.—Bond issue of \$8,000 has been voted for improvements to water works.

CONTRACTS AWARDED

Orange, Cal.—To H. R. Worthington Co. of this city, for furnishing and installing pumping engine, at \$6,368.

Fort Wayne, Ind.—For furnishing 500 tons of water pipe, to James B. Clow & Sons, of Chicago.

Clarksdale, Miss.—To Murray Iron Works, of Burlington, Ia., for furnishing 250 horsepower boiler and feed pump for Water Department.

Snyder, Neb.—By city, to Katz-Craig Contracting Co., of Omaha, for installation of water works, at \$8,000.

Jersey City, N. J.—For new fire station for Pioneer Hose Co., of Union Hill, to Robt. Limouze & Bros., at \$12,635.

BIDS RECEIVED

Baltimore, Md.—Following are bids received on Storm Water Contract No. 20: Ryan & Reilly, Baltimore, Md., \$18,895; Wm. McCarthy & Co., Baltimore, Md., \$19,217.55; N. A. Middleton & Co., Baltimore, Md., \$19,369.95; B. F. Sweeten & Son, Baltimore, Md., \$20,637.50; the Whiting-Turner Construction Co., Baltimore, Md., \$20,772.35.

LIGHTING AND POWER

Haleyville, Ala.—Construction of lighting system is being considered. M. S. Drewrey is City Clerk.

Columbus Junction, Ia.—Franchise has been granted for lighting city to E. N. Miller.

Humeston, Ia.—Election will be held for voting on bond issue of \$15,000 for electric light plant.

Merrill, Ia.—Citizens are contemplating installation of electric light system.

East Grand Locks, Minn.—City will advertise for ornamental street lights; estimated cost, \$4,000.

Flemington, N. J.—Flemington and Lambertville gas plants are to be connected. Distance is about 12 miles.

Jamestown, N. Dak.—Bids will shortly be called for installing a "White Way" on business streets.

Nashville, Tenn.—Something over 5,000 votes have been cast in gas franchise election, proposition to grant Nashville Gas & Heating Co. a 40-year franchise carrying by about 1,000 majority.